

Architecture for Food



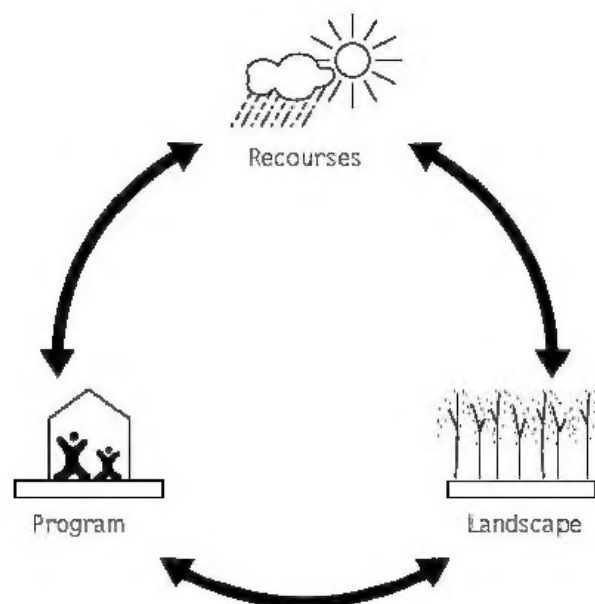
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Food buildings
Food landscapes
Culinary planning

Business models for Urban farming
High-tech Low-tech in Greenport Westland
The story of our food by Maartje Somers
Harvesting climbing fruits in the garden city



Architecture for Food



Cities and Food are inextricably linked. Ever since their genesis they are interconnected on the levels of production, processing, logistics and of course consumption. And especially today when half of contemporary civilization is living in cities this spatial interconnection is more relevant than ever.

This magazine 'Architecture for Food' explores the future of Food and Cities. In and around buildings, in urban courts and parks and around the city and its edges. Food cultivated for consumption, for recreation, for exposition or research. Architecture for Food.

Since 2000 van Bergen Kolpa Architects researches, designs and builds 'Architecture for Food'. By actively working on the spatial dimension of food it can vitalize the city and create the places for people and one of their first needs in life.

Focus of the working method is the formation of a balance – a natural equilibrium – between the food programme, –landscapes and their need of natural resources. The balance is a dynamic system like a natural scaleless ecology, which can connect different spatial conditions and programs. In this way the seeming contradictions

between design brief, technology and context can be used in an inventive and positive way. The spatial translation of these processes generate new typologies for the city, buildings or landscape. This makes the imaginative power of architecture, in an era marked by intensive space utilization and by environmental challenges, of great importance and highly relevant for the future.

Van Bergen Kolpa Architects is organized around its best-developed capacity: designing and realizing architectural projects on the basis of solid research. In the studio, a compact, enthusiastic team of university/academy trained specialists works under the leadership of two architect/directors.

Over the years, we have accumulated working experience with a broad team of external advisors who support the firm in its design activities. This approach means we can concentrate on our core activity, designing the built fabric, so that on each project we can seek the specific enrichment and expertise that accords best with the project ambition.



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Worlds



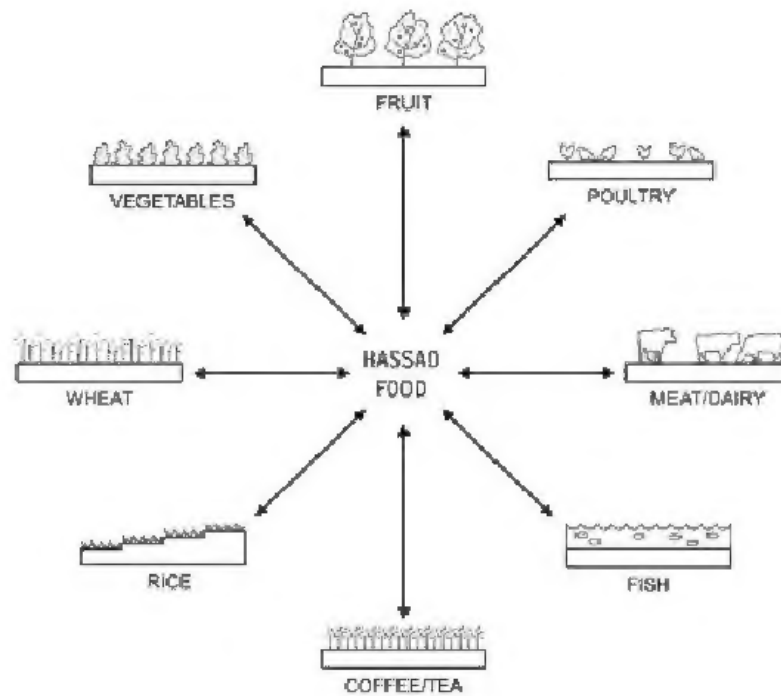
An aerial perspective of a futuristic desert landscape. The terrain is a mix of white sand and lush greenery. Winding, light-brown paths lead through the landscape, bordered by low white walls. On the left, a large, irregularly shaped blue water feature with a sandy beach area and people is visible. Below it, a series of small, circular blue ponds are arranged in a row. The landscape is dotted with various types of trees, including palm trees and smaller green trees. The overall design suggests a high-tech, sustainable environment.

of Food

High-tech oasis in the desert



Food Valley



Hassad Food aspires a showcase of its worldwide involvement in food production and processing. The company's ambition is to achieve food security for Qatar with worldwide production from horticulture, livestock, fisheries and open field agriculture providing a healthy meal for all its inhabitants. The expo is planned on a location near Doha with an agricultural programme of 3,3 hectares combined with education and lodging facilities. How to envision the client's ambition in a desert condition?

Food Valley

The building is organized around a central food valley. The food valley acts as a sunken oasis with terraces showcasing worldwide agricultural landscapes. Spaces around the valley can accommodate education, laboratories and lodging. The building can be equipped with a high technology sustainable cooling system and sweet water production depending on location/access to cold seawater.

Food Gardens

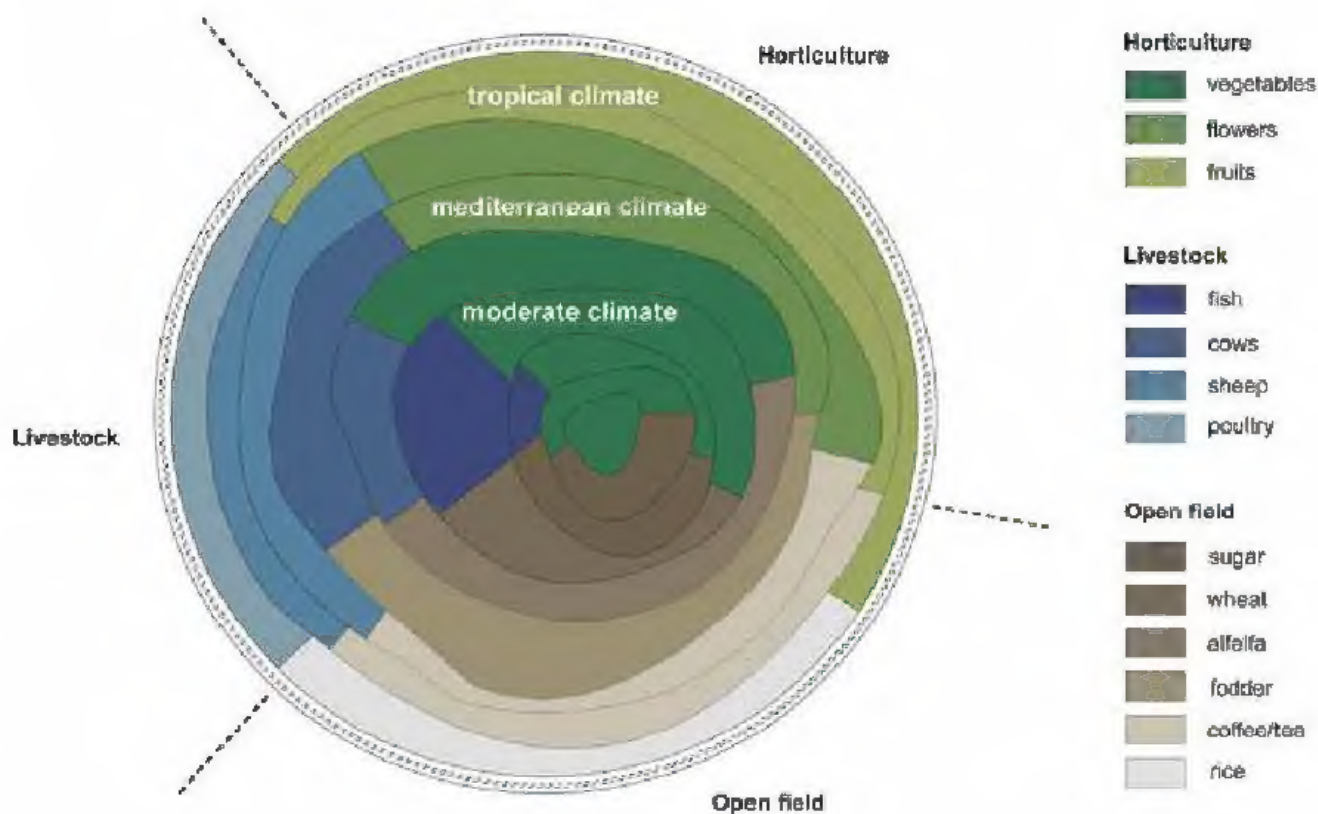
The building is organized as a carpet of covered food gardens. Each garden shows worldwide food products within their own microclimate. A 'Royal' tour through these gardens is a sensible experience of smells and flavors of the client's food products. Spaces around the gardens can accommodate education, laboratories and lodging. The building roof shades, humidifies and cools with high technologies providing a pleasant and comfortable environment.

Food Tower

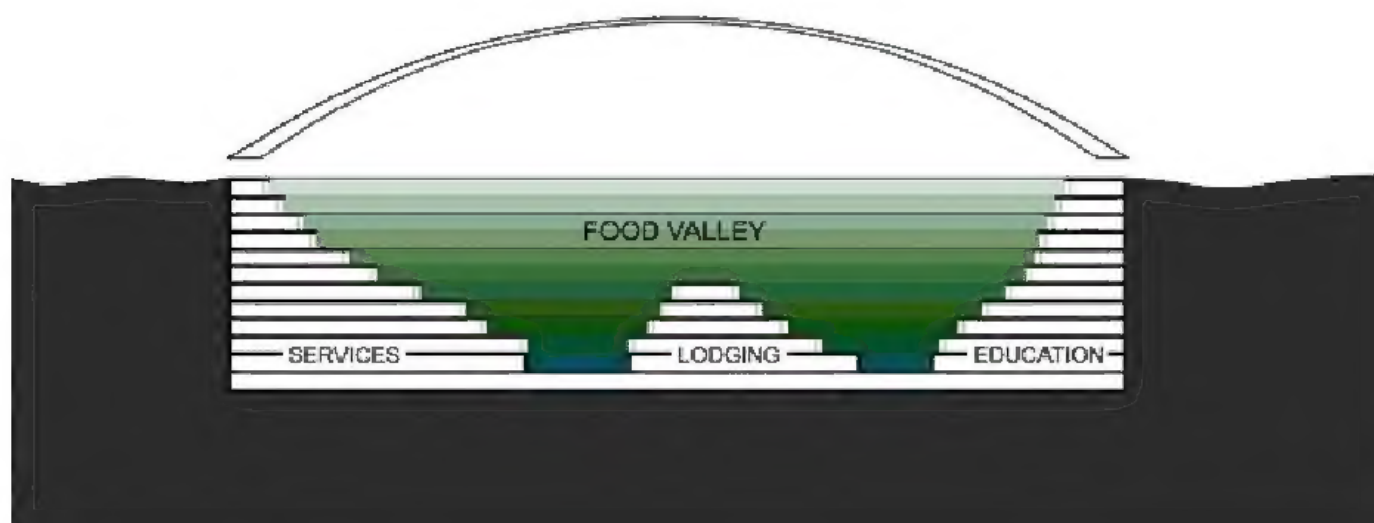
A building is organized as a series of stacked landscapes. The building displays the future ambition of the clients becoming the food supplier of the Gulf region. Different floors show the latest agricultural techniques within a controlled high tech eco system. The Food tower is situated in the metropolitan area of Doha, preferably in the vicinity of the head offices. The Food Tower accommodates educational and lodging facilities on the top floors offering the guests splendid views of Doha.

- 1 Floorplan with climate zones
- 2 Section and program

1



2

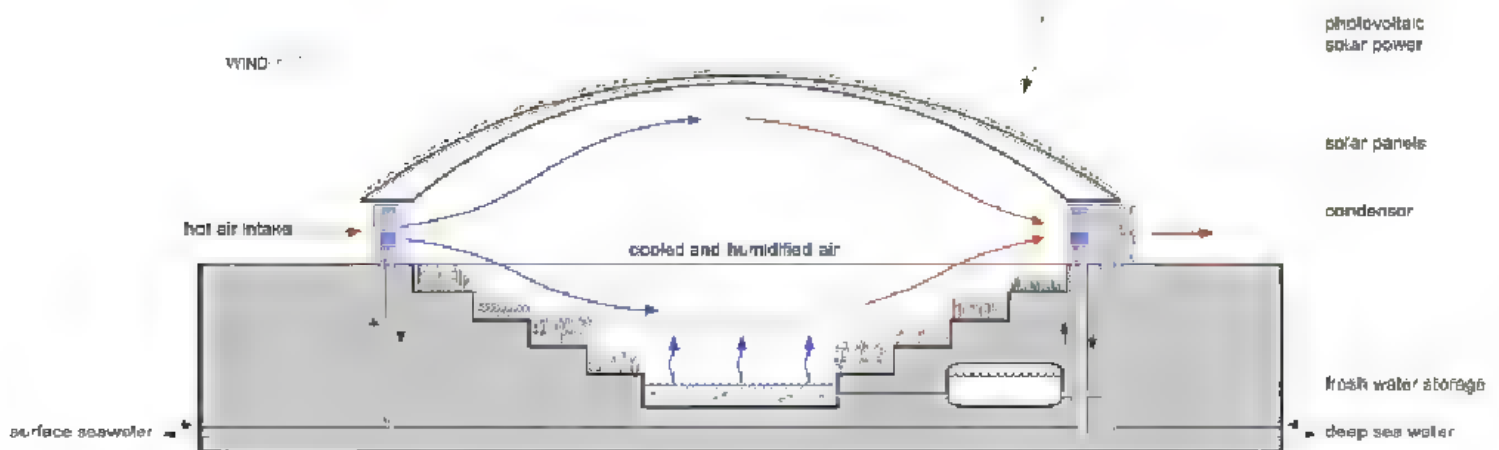


3 Expositionspace

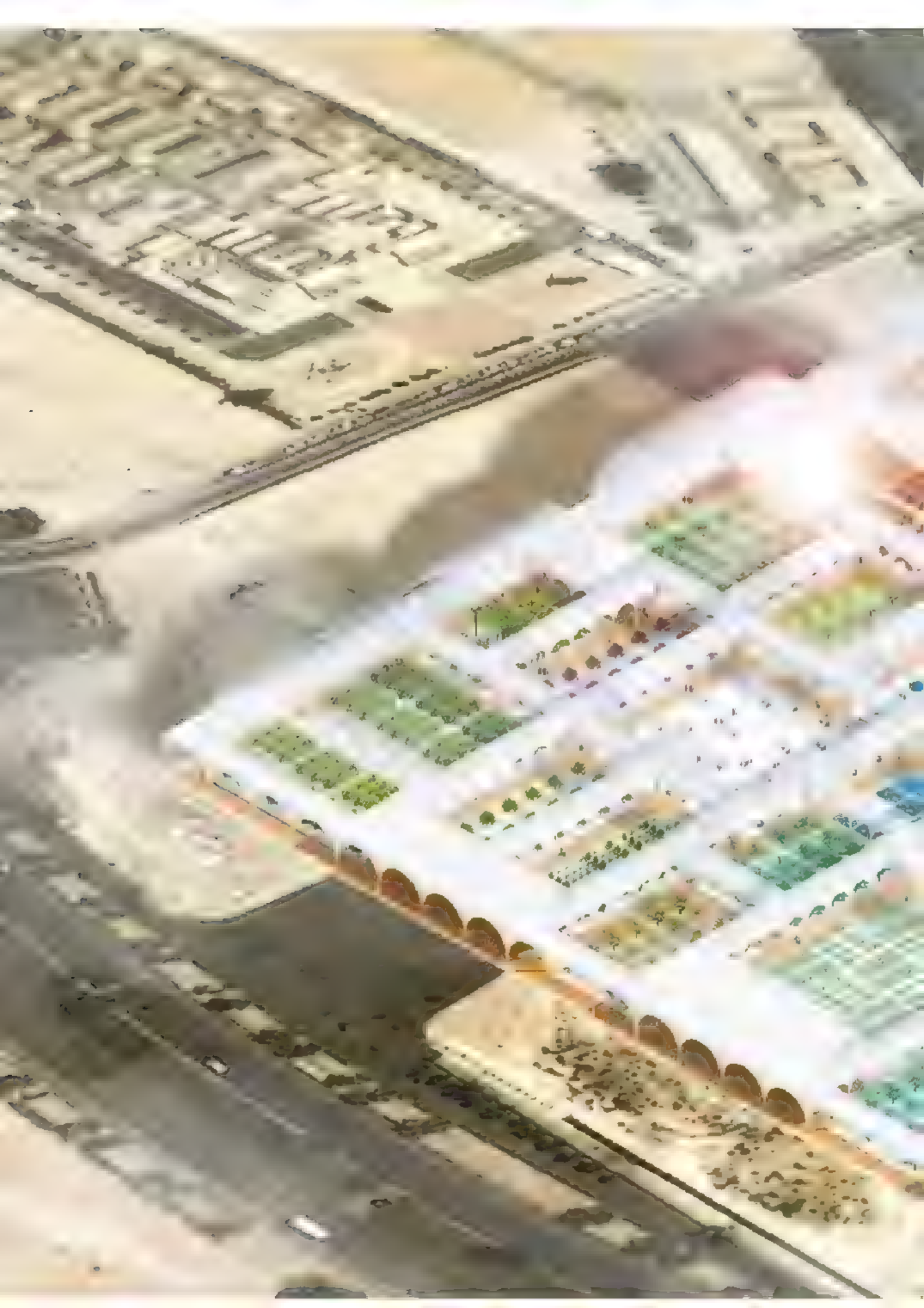
4 Section and climate system



3



4



Food Gardens

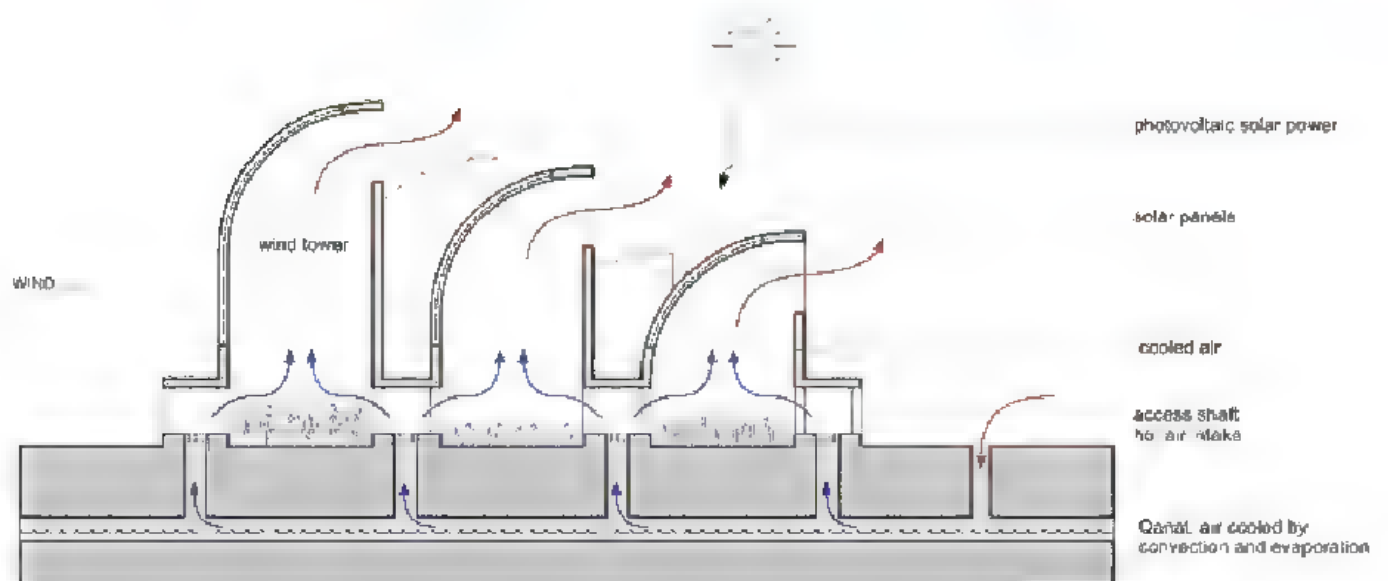
The Royal walk

Food Gardens. The building is organized as a carpet of covered food gardens. Each garden shows worldwide food products within their own microclimate. A Royal tour through these gardens is a sensible experience of smells and flavors of the client's food products. Spaces around the gardens can accommodate education, laboratories and lodging. The building roof shades, humidifies and cools with high technologies providing a pleasant and comfortable environment.

- 1 Expositionspace
- 2 Section and climate system

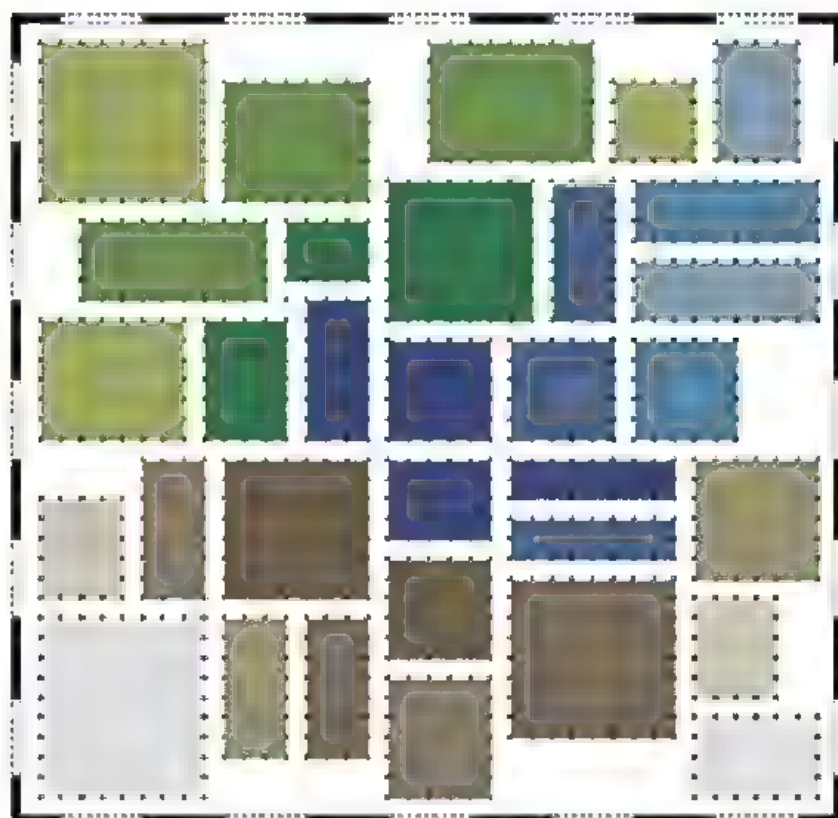


1






2





3 Floorplan and program
4 Food departments






Horticulture

-  vegetables
-  flowers
-  fruits

Livestock

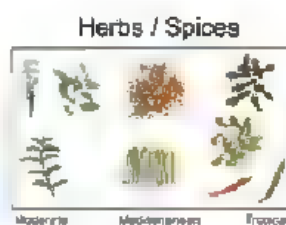
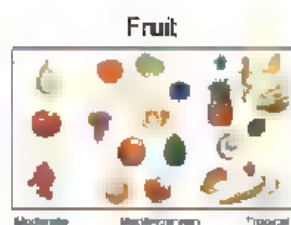
-  fish
-  cows
-  sheep
-  poultry

Open field

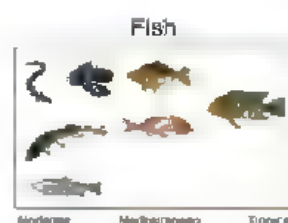
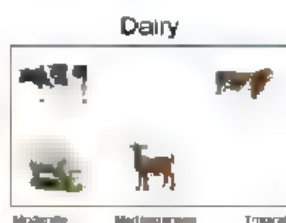
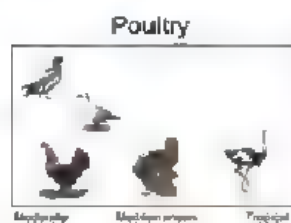
-  sugar
-  wheat
-  alfalfa
-  fodder
-  coffee/tea
-  rice

3

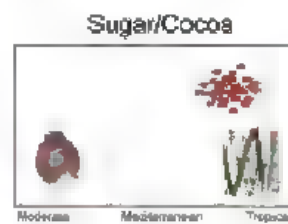
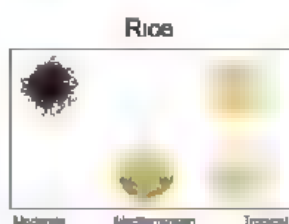
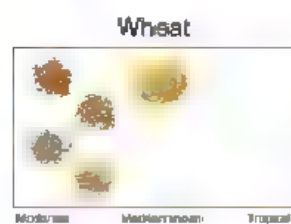
Horticulture



Livestock



Open field

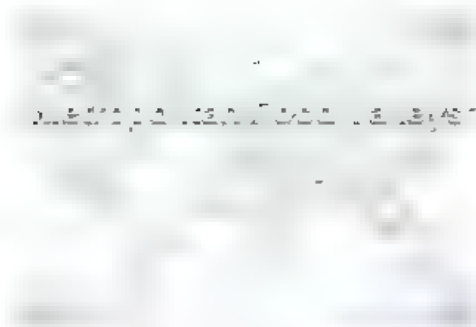


4

Beijing Food Valley







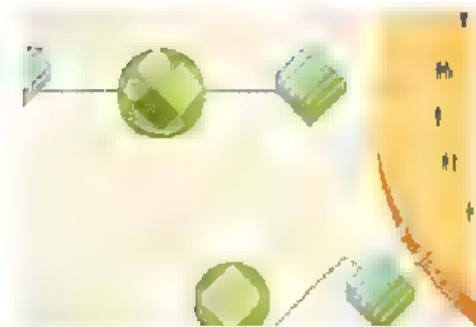
Metropolitan Food Valleys by Wageningen UR and van Bergen Kolpa Architects presenting the Beijing Food Valley



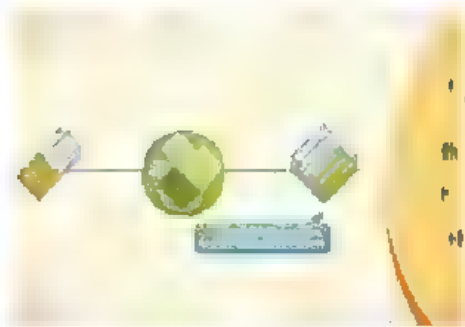
Welcome to Beijing Food Valley



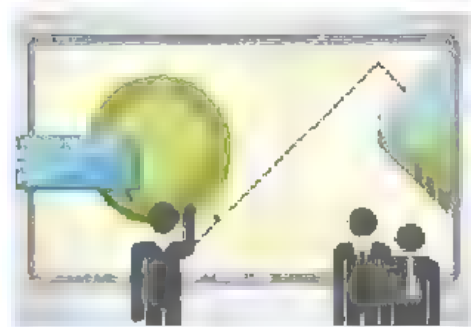
Beijing Food Valley is preparing for China's rapidly growing urban population



distributing and delivering using cooled transport



Via consolidation centers to the metropolitan markets



A team of Dutch Agricultural scientist and Urban Planners, local Government and Market parties design the Metropolitan Food valleys



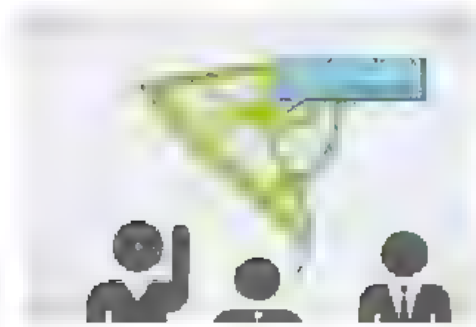
Concentrating food production



creating space for new urban development



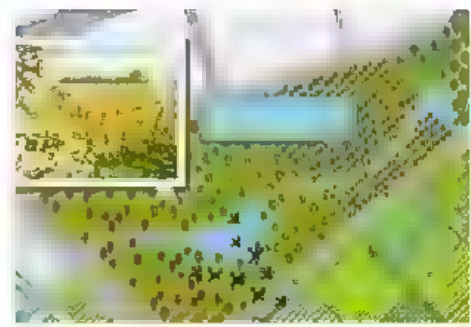
In the Beijing Food Valley living, working and leisure is combined with Commercial agriculture



with urban islands for residential commercial and industrial development surrounded by the green heart of various agricultural landscapes



The Commercial Agriculture with economy of scale and high yields



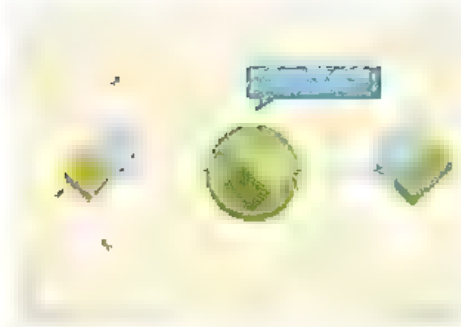
Ecological Agriculture with biodiversity original species and natural landscapes



food-producing farmers turn into urban food consumers



wealthy consumers switch from a diet of basic food to a high quality diet of fresh food



Producing high quality foods in Agro Parks



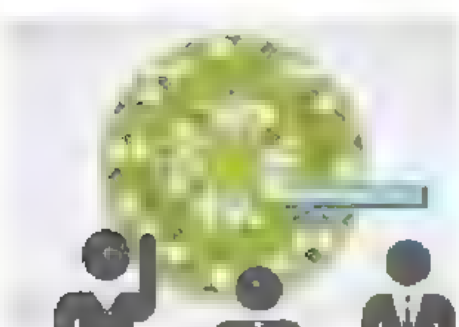
In the Agro Park different chains of fresh food production are combined



with city development education and research facilities



and the exchange of residual heat and waste water with the city



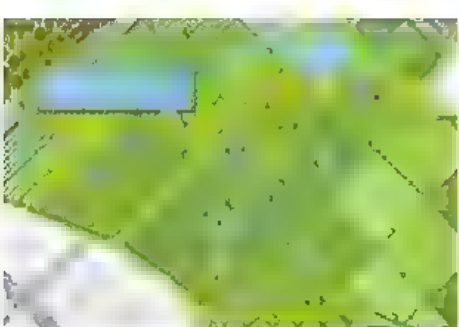
Ecological agriculture



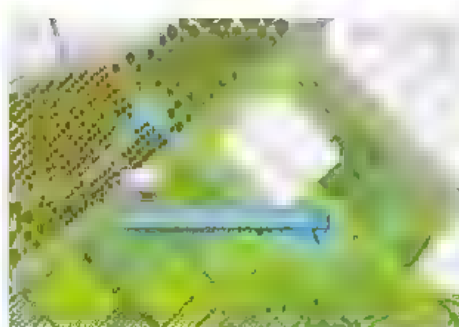
Urban agriculture



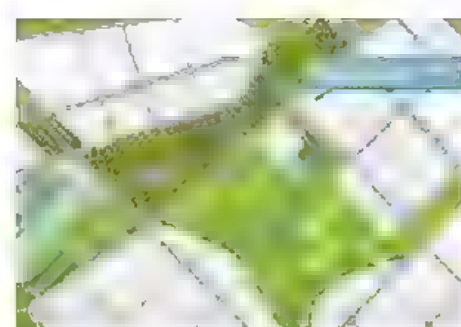
Within the borders of existing rivers, infrastructure forests and rural settlements the Beijing Food Valley is designed and developed



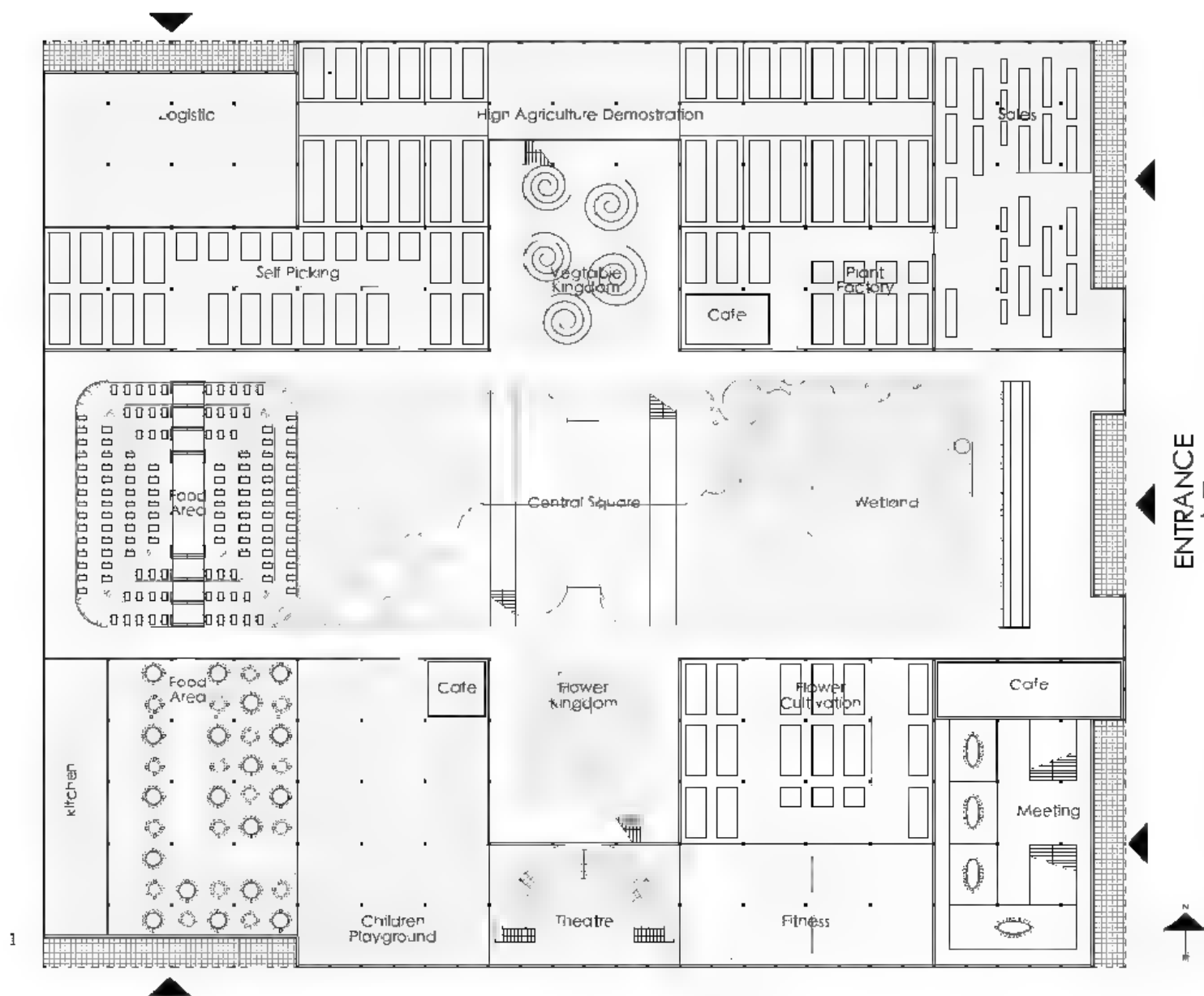
Urban Agriculture in the Greenheart where people can experience and enjoy food production trails and recreation facilities.



The Agricultural Information Center, a high-tech glasshouse with restaurants and eco wetland. The public heart of Beijing Food Valley



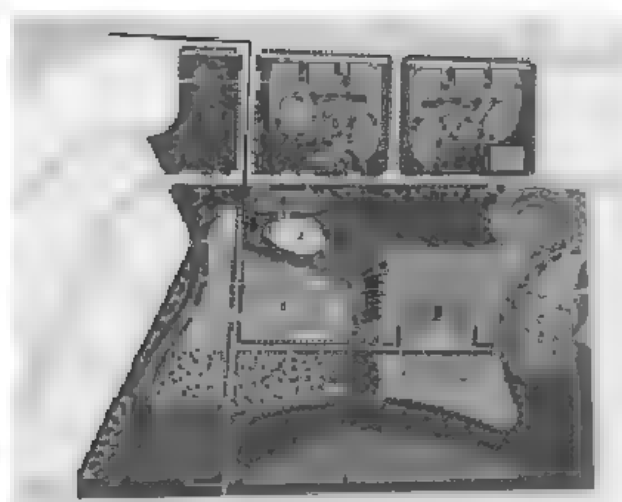
Showing how Metropolitan Food Valleys can combine city development and food production to a green and healthy city



1 Floorplan

2 Buildings concept model

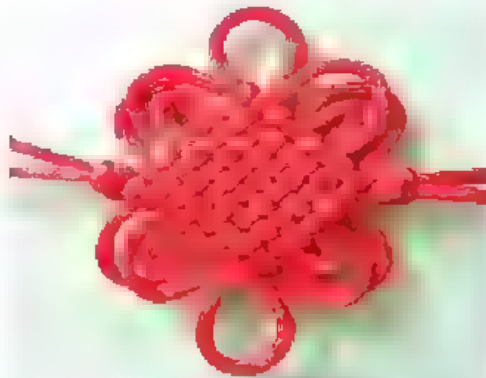
3 Situation and build environment



COFCO

demonstration centre

Foodbuildings in the heart of a New Town



COFCO aspires a Demonstration Center where agriculture, ecology and leisure come together. The new Demonstration Centre will be located at the entrance of the Eco Valley area in Beijing. The center wants to show the newest technologies for sustainable growth of vegetables, fruits and flowers. In the center visitors can experience and enjoy the production and taste of fresh food and flowers throughout the year.

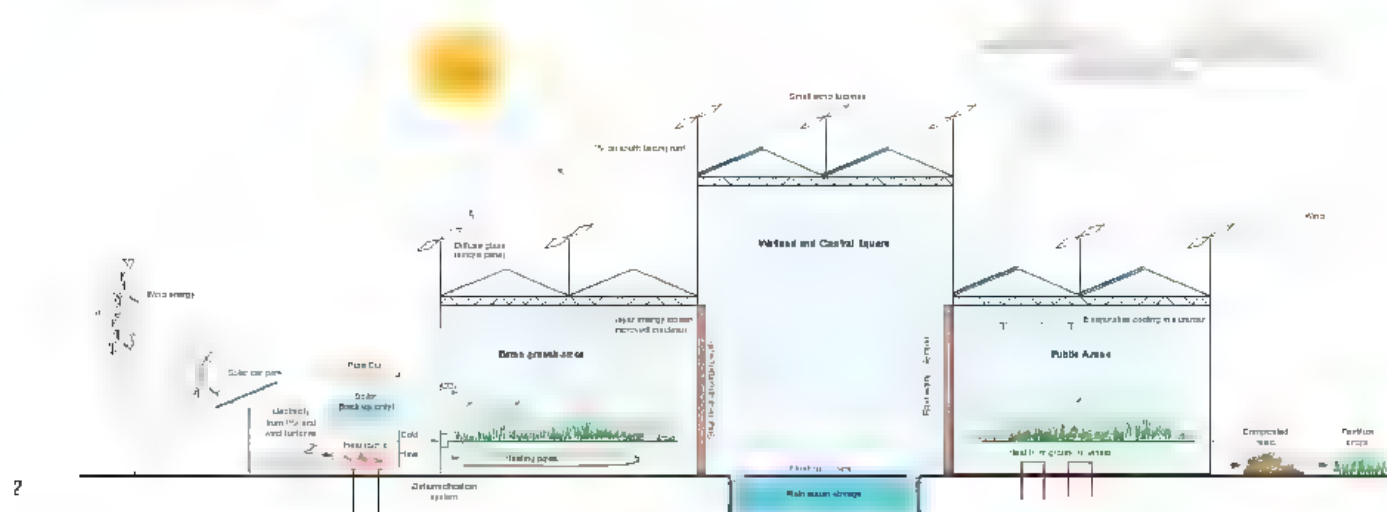
The building is a proud building; a transparent sculpture of steel and glass based on a standard Dutch greenhouse type. The special entrance and wetland garden form the high and spacious heart of

the building. From this central hall the volume terraces down to the agriculture and leisure zones. The building has been divided into different rooms with a specific landscape theme.

A routing system is designed, inspired by a Chinese knot, in such a way that short or long routes can be made. In the central hall lies a wetland garden with in the heart a central plaza. Beside the wetland, there is a flower kingdom with spectacular flower hills and hanging plants, ceiling, a restaurant on a flower hill, a theatre, a self-picking garden, a vegetable kingdom, and a high-tech agriculture demonstration zone.



- 1 Expanding in its surrounding
- 2 Climate concept
- 3 Flowergarden and water hall





The background image is a photograph of a green field. In the foreground, there is a large flock of sheep, many of which are wearing colorful, patterned collars. The sheep are grazing on the grass. In the background, there is a white fence and some industrial structures, possibly a farm or a processing plant. The overall scene is a mix of nature and urban/industrial elements.

Green Deal Urban Agriculture

Business cases for Dutch urban farmers



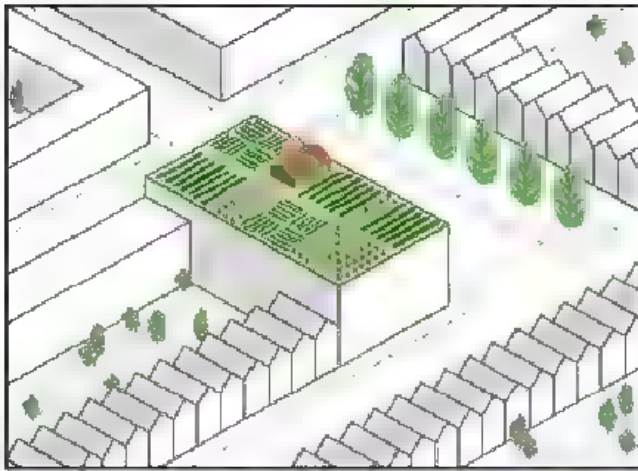


Together with the Dutch Ministries of Agriculture and economic affairs, University of Wageningen, Priva Horticulture and De volharding Finance van Bergen Kolpa Architects initiated the National Federation for Urban Agriculture. The aim of the Federation is to professionalize Urban Agriculture. Urban Agriculture stimulates local economies, improves the environment and social interaction and provides food produced in and around the city. The Federation supports Urban Farmers with knowledge, finance and spatial design.

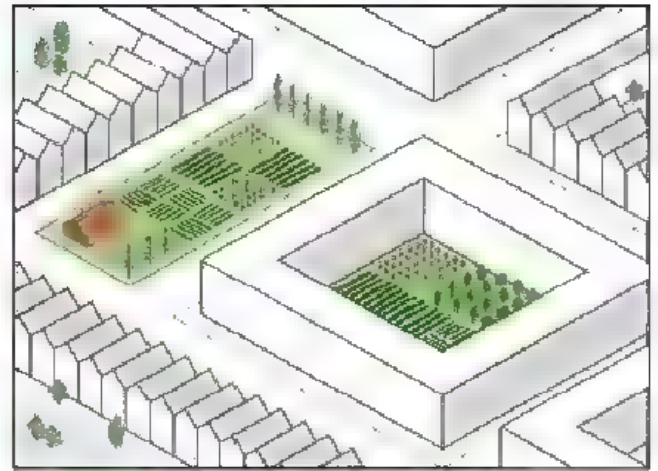
In preparation of the Federation for Urban Agriculture twelve urban agriculture initiatives were studied on various levels: spatially, programmatically, technically and economically.

The projects are situated inside or on the rooftop of buildings in the public realm of the city, around the city borders or on the outskirts of the city. Some of the projects have a temporary status, others are permanent and deploy low-tech open field techniques or high-tech indoor techniques such as LED artificial lighting. What all projects have in common is a variety of economic activities among their urban food production. A fruit orchard combined with a restaurant, rooftop farming on top of offices or vegetable gardens with health facilities. Urban agriculture is by definition a mixed-use activity and needs to be financed in such manner. Financing Urban agriculture therefore demands a combination of both public and private resources.

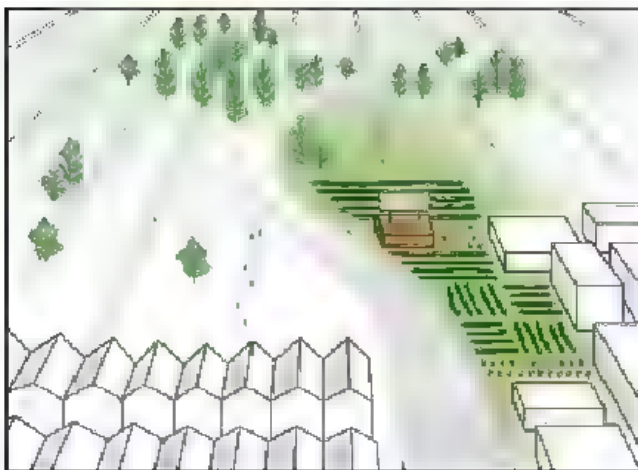




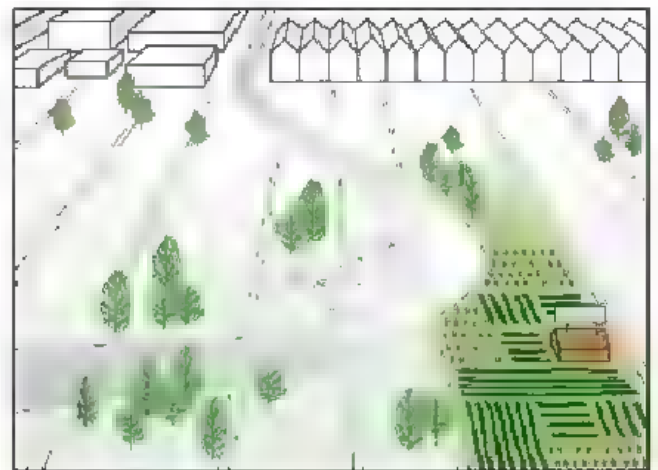
Inside or on top of a building



In the city



On the edge of a city



Rural and focused on the city

Location	Urban program	Production space	Hotel, catering	Business/retail	Product sales	Recreation	Education	Social and Health care	Place making
Inside or on top of buildings									
Floor garden	enclosed space with artificial light	restaurant	offices, meeting rooms	to shops, restaurants			experiential, innovation		for office program
Roof bases	roof landscape with a various culture	restaurant	offices, meeting rooms	to office employee and relatives	terrace		experience		for office program
Orangery	glasshouse with garden to repose	hotel, cafe, restaurant	meeting rooms	own use	terrace		expo		for hotel program
Food expo	exposition and experience garden under glass	cafe	conference, meeting rooms	to shops, restaurants	terrace		exposition, learning, working		
In the city									
Court garden	garden surrounded by buildings	cafe, restaurant, party		own use	terrace, play ground		experience	schools, volunteers	
Walled Garden, Kitchen Garden	framed garden with clear edges	hotel, restaurant	conference, meeting rooms	to shops, restaurants	terrace, play ground		earning, working, school classes	volunteers	for residential program
Arkensom	food landscape with trees and low culture	cafe, restaurant	meeting rooms	own use, to shops	terrace, play ground		learning, working, school classes	volunteers	for residential program
On the edge of the city									
Campus Experience Garden	yard or area with various of program	cafe, restaurant	event, meeting rooms	to shops, restaurants	terrace, play ground		experience and activities	schools, volunteers	
Plantation	field with monoculture						learning, working	psychiatry, addiction care	for residential program
Rural and focused on the city									
Patchwork Garden, Carpet Garden	field with various culture			shops, delivering participants	walking, cycling		earning, working	volunteers	for residential program
Room Landscape	by trees and woods surrounded field	hotel, restaurant	conference, meeting rooms	to shops, restaurants	walking, cycling, terrace		earning, working	psychiatry, addiction care	



Villa Augustus hotel restaurant Dordrecht



Kitchen Garden, Shgo Ireland



Roofgarden Zuidpark
Roof oasis



Roof greenhouse Hotel Amstelkwartier
Orangery



Metfarm
Floor garden



Uit Je Eigen Stad
Walled garden



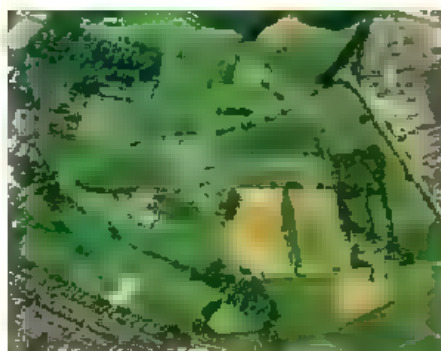
Rotterdamse Munt
Plantation



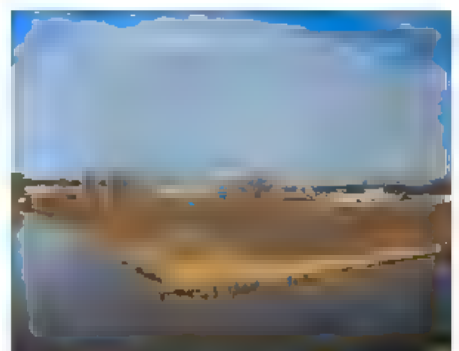
Grown Down Town
Campus



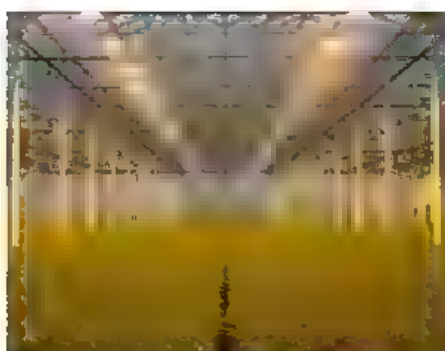
Moestuin Maarschalkerveend
Courtyard garden



Landgoederenzone Maastricht
Roomlandscape



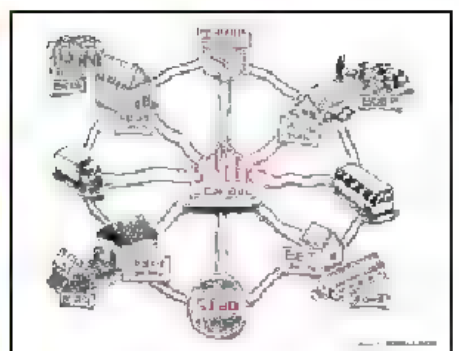
Nieuwe Akker
Open field



Mijnwaterenergie
Production greenhouse



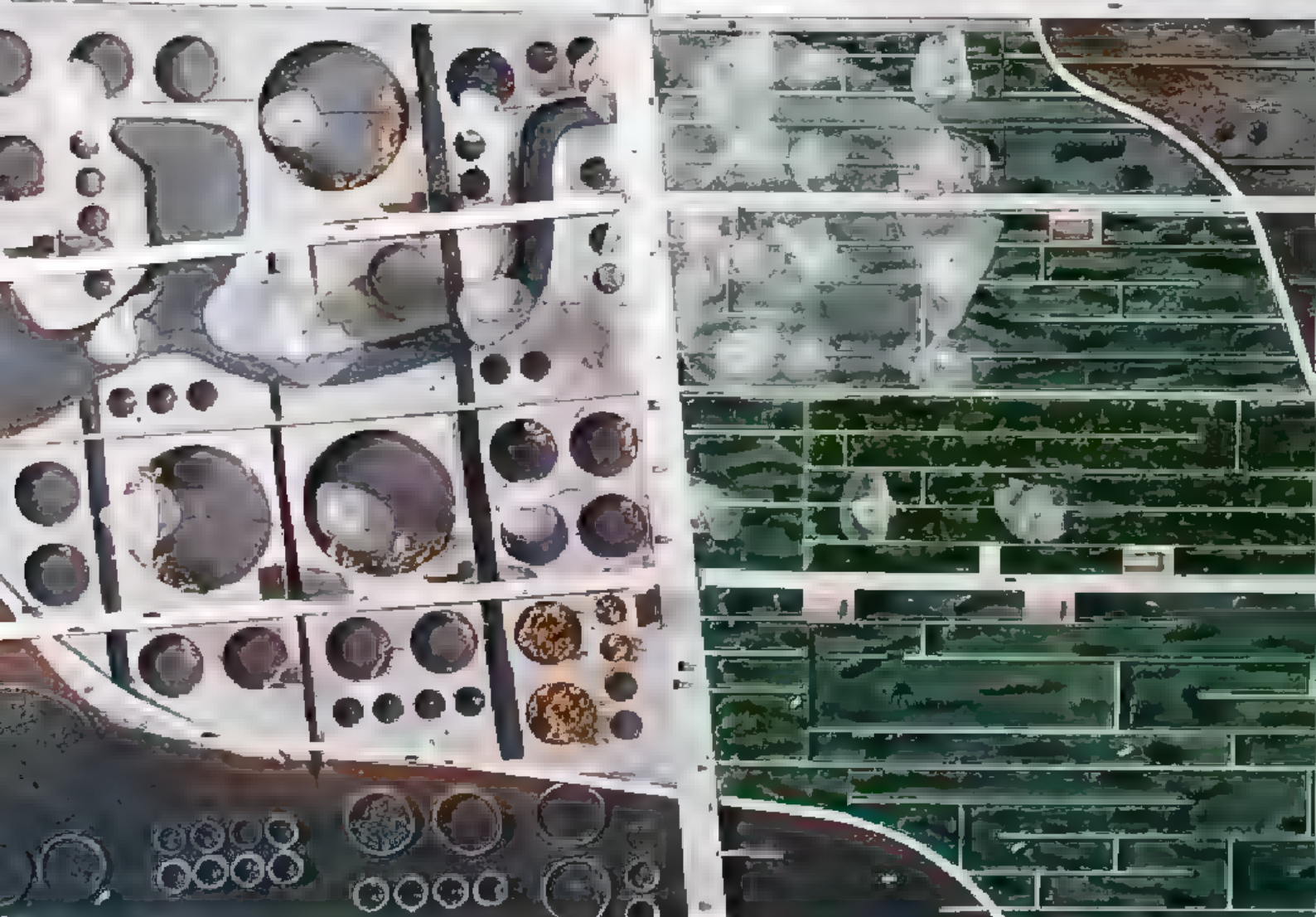
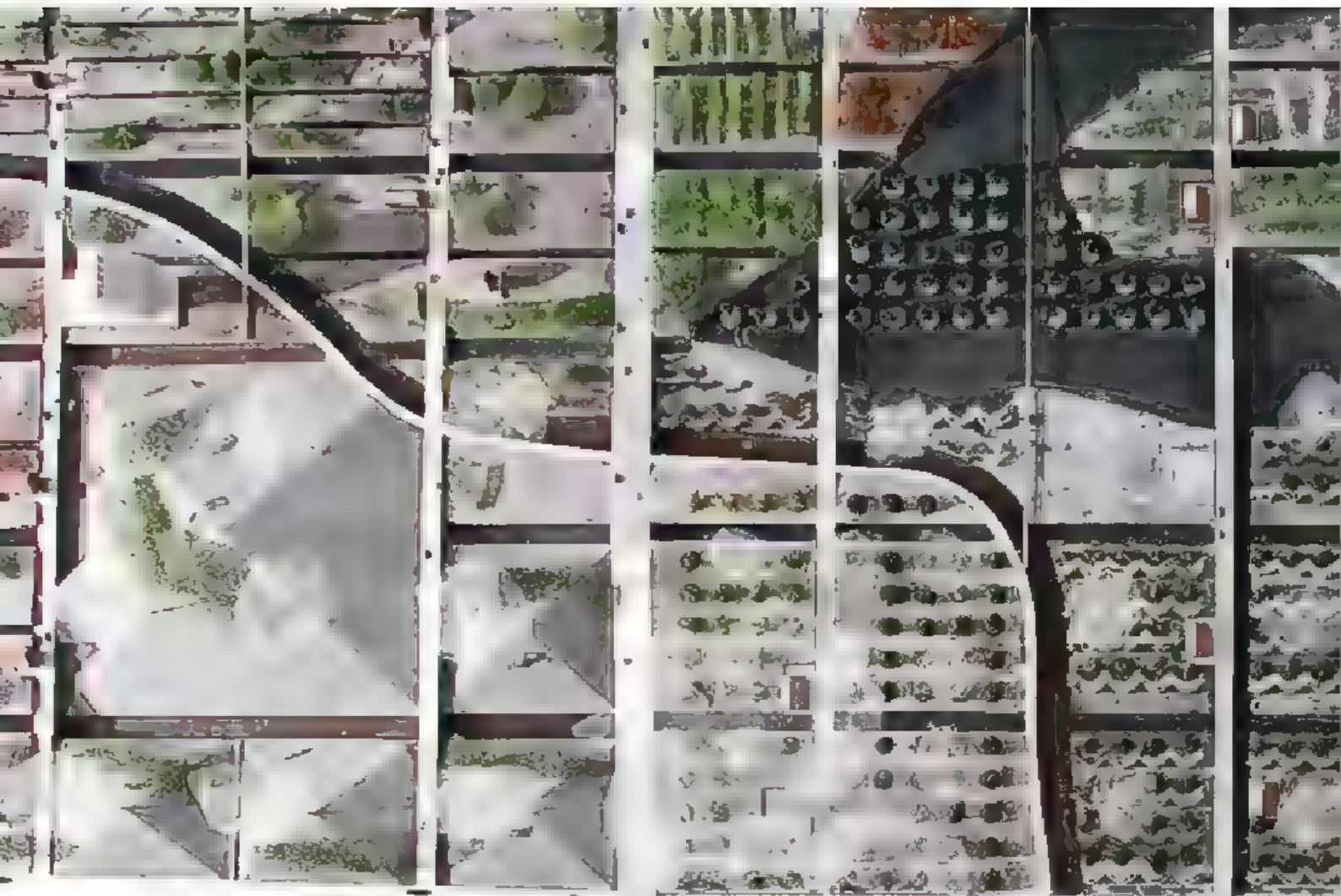
Schapenboerderij Schieveen
Experience garden



Streeklokaal Doetinchem
Network

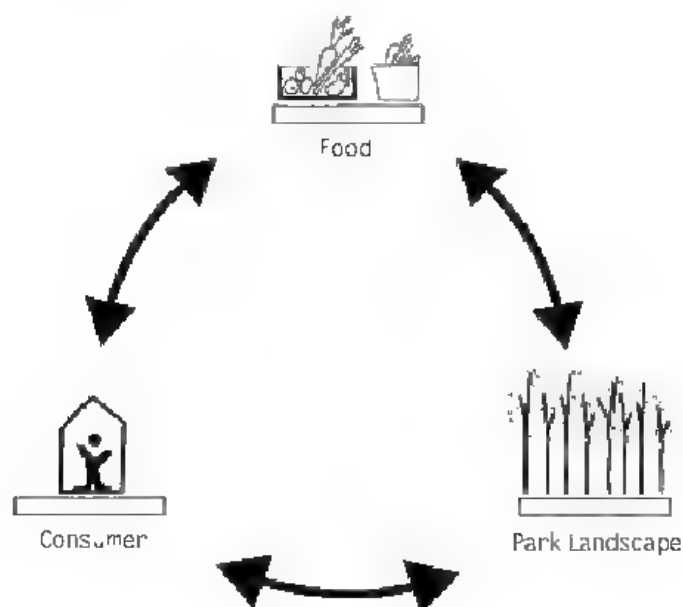






Park Supermarket

Production and recreation around the city



Park Supermarket is a recreational and educational Park where the contents of a contemporary Supermarket are cultivated and sold. In the green market gardens, nurseries and orchards you can experience all aspects of locally grown produce such as avocados, mangos and even rice. Water, nutrients and energy are locally harvested and exchanged within the Park. Park Supermarket, developed and operated by local farmers and entrepreneurs, is situated in the Metropolitan Parks embracing the cities of the Randstad.

The ecosystem of the Park Supermarket has been set up around local food production, distribution and consumption. Based on underlying soil types (peat and clay), new climate zones (moderate, mediterranean and tropical), and raised water levels, an entirely new landscape is introduced where the contents of a contemporary supermarket are cultivated and sold. The variety of products produced reflects the needs of the 177 culinary traditions that live in the cities that surround the Park Supermarket. Each department knows its characteristic growing conditions and product types such as Pandan-en Risotto, rice on water terraces, Tilapia fish in basins and kiwi's and avocados along undulating fruit walls. The climate household of the outdoor supermarket is supported by old techniques such as warmth accumulating snake walls and more contemporary

solutions as insulating water spray 'roofs' and floor heating on the basis of thermal heat.

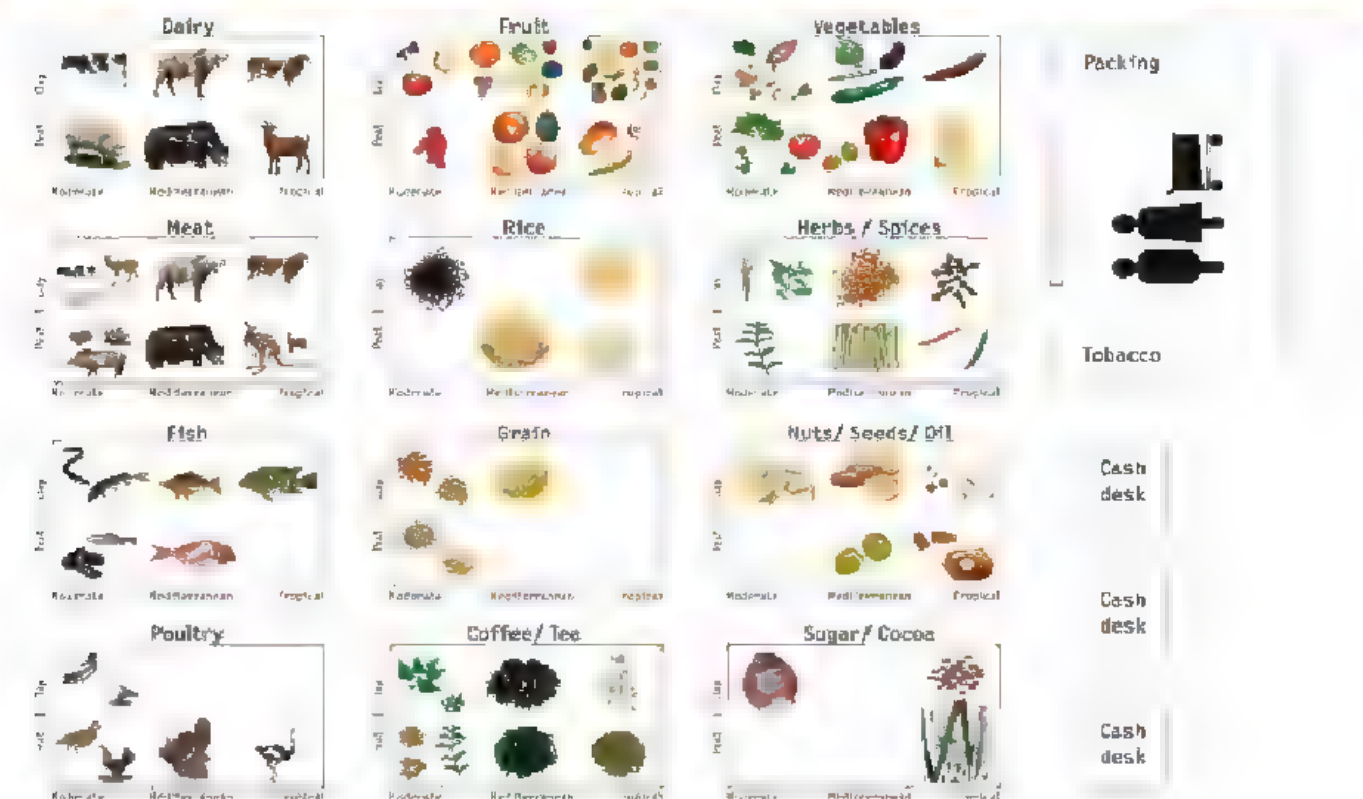
Because of its set up in small plots of one hectare each, Park Supermarket is able to grow with the need for diversity of food of the consumer and the renewing insights in agrarian techniques. Randstad inhabitants will in this way be able to consume and recreate in a new Park landscape for the 21st century. The contents of a contemporary supermarket are cultivated and sold. Each department knows its characteristic growing conditions and product types such as Pandan-en Risotto, rice on water terraces, Tilapia fish in basins and kiwi's and avocados along undulating fruit walls. The climate household of the outdoor supermarket is supported by old techniques such as warmth accumulating snake walls and more contemporary solutions as insulating water spray 'roofs' and floor heating on the basis of thermal warmth.

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- 1 Meat department
- 2 Product departments

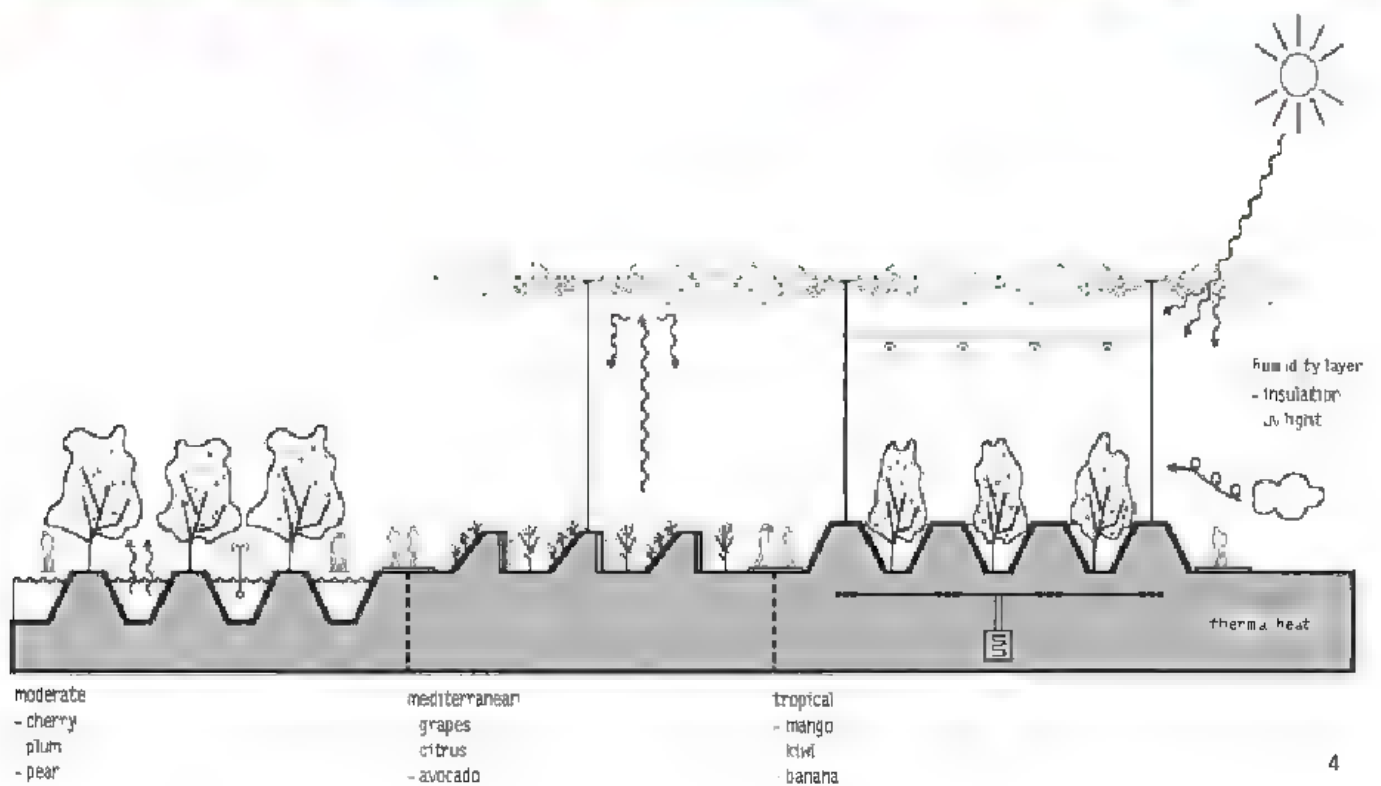


1



2

3 Rice department
4 Section



The story of our Food

by journalist Maartje Somers

Every time we eat a piece of food, we take a bite out of the world. All these small bites tell a dozen stories. A carton of eggs presents the story of contented hens, a bottle of olive oil the tale of Italian grandmothers. Yet these pastoral scenes barely hide the realities of a food system that leaves one billion people starving and another billion overweight. Moving beyond food-based fictions, how should we react to the truth?

It happened in a trendy restaurant. A breadbasket and a small bowl of olives had just been brought to the table. Our hands reached out to take some, when the waitress stopped us. "Wait," she interrupted, "I have to explain the bread." Explain the bread? Yes, that one variety of bread had been baked with hard durum wheat from a village just south of Tuscany, the other one came from a bakery slightly north of Amsterdam. The olives were kalamata olives, imported from Thessaloniki, and olivas violadas (olives 'raped' by an almond) from Basque Country in Spain. It took the waitress about five minutes to finish her lecture. Then, finally we could dig in.

All our food comes with a story to tell, and usually it is the story we want to hear. In the supermarket the story is about the price of the food, in a restaurant it is about the taste and the origin.

These days all our food comes with a story to tell. Usually it is the story we want to hear. In the supermarket the story is about the price of food, in a restaurant or delicatessen it is about taste and origin. Very often stories about food focus on authenticity. That is the way food would like to be: authentic and natural like in the old days when people harvested their own crops. And this is exactly what we want to believe. The jam in my fridge has 'a natural taste' and the milk is 'pure and honest'. Eat colour, it says on the posters in the street, displaying juicy red peppers. And these shiny vegetables almost jump from the page in the cookbooks by Jamie Oliver and Nigella Lawson, bestsellers the world over. But at the same time we are buying more and more ready-made meals.

The stories about food mask reality. It is quite obvious that our food is not natural and hasn't been so for a very long time. Deep down we all know this. And of course we know that the happy little lambs and fluffy little chicks we find in the supermarket around Easter time are in stark contrast to the reality of factory farming. Of course we know that Bertolli olive oil is not hand-pressed by those Italian grandmothers in the commercial, but that it is made in a factory owned by the multinational corporation Unilever. Very little is natural in modern food. More likely our food is a miracle of chemistry, logistics and technique. In 2007 artist Christien Meindertsma published her book *PIG 05049*, a thorough research of all the products made from one single pig with that specific number. The results are quite amazing. Pork chops and sausages, obviously. But also winegums and muffins and bread?

Work gloves, porcelain, beer, wine, whipped cream, paper, fish, food and bullets?

One might say that we have been alienated from our food. We don't have a clue what is inside those bags and packages we buy, but at the same time we feed our imagination with an idealized image of how our food is grown and produced. That is the reason why there are so many stories to tell. The distance between the pastoral story on the surface and the industrial reality behind the scenes is greater than ever. How did this happen? It is because of the success of our global food system. It all started after the Second World War. 'No more hunger' was the motto. Western governments focused on an increase in production, on cost reduction and efficiency. With the invention and use of fertilizers things changed really fast. In the period between 1947 and 1979 the production levels of global agriculture doubled. The wave of liberalization in the 1980s and the accompanying improvements in infrastructure, technique and logistics, were followed by a steady rise in the number of trade transactions. The sky was the limit: apples from New Zealand, meat from Brazil, shrimps from the Pacific.

All over the world the landscape changed. In line with the postwar process of upscaling, small streams were straightened, wooded banks were torn down and fields were combined in land consolidation transactions. Rye and wheat were replaced with corn, corn and corn. Farmers turned from mixed farming to either agriculture or cattle breeding. Their livestock disappeared inside the stables. Intensive farming took the upper hand, due to the low price of concentrate food, and subsequently soy. These changes in agriculture contributed to the schism between the city and the countryside, one of the most defining aspects of our modern world. In former times the cultivation of food and the slaughtering of cattle all took place inside and around the city. But with the increased separation of these functions, first after the industrial revolution and next after the Second World War, the city became a world of stone. Food disappeared from the view of the city dweller and was transported to the countryside. In our day and age the only green areas in the urban landscape are the city parks, intended for leisure exclusively. The few bramble bushes I could find in my home town were recently removed and replaced with urban green.

I must repeat: the global food system is a great success. According to the Czech demographer Vaclav Smil, two-fifth of the current world population would be dead if we didn't have fertilizers. The biggest boom in world population happened in the 50s, 60s and

70s of the last century. There is no shortage of food: there is more than enough to feed everybody. The world produces some three thousand calories per head each day. In the western world the term food security has gone out of fashion. Food is always available in great abundance and it is amazingly cheap – we spend very little of our income on food. For people in the western world the choice is staggering. This hit me in the face once again when I overheard a toddler in a supermarket saying 'Daddy, where can I find the carpaccio?' The Netherlands is one of the world leaders in intensive farming. After Brazil we are the leading exporter of food, especially meat, dairy products and vegetables.

We have this little kid that asks for the carpaccio, whereas other children don't even know what a carrot looks like because all the food they know comes from a jar.

The agribusiness makes up 10 percent of Holland's domestic product. But there is a dark side to our food system. Over the past ten years this has become more and more obvious. For example, the system is bad for our health. The huge concentrations of livestock are the cause of animal diseases that can also be dangerous to humans: mad cow disease, the swine flu, Q fever. Additionally, the complex, global mixture of our food carries a great risk. The poisonous powdered milk that killed babies in China was also found in lollipops in Europe. We are getting fatter and fatter. In Europe one in four people is overweight. In the United States diabetes has almost turned into a lifestyle. In emerging economies like China and Latin America, eating habits are starting to resemble those in the western world, resulting in a rapid rise of obesity. Fresh fruit and vegetables are expensive, bad food, made from cheap bulk ingredients like glucose (from corn), soy and palm oil and disguised in ever-changing colourful packages, is cheap. All over the world this creates a kind of food apartheid system: rich people who eat fresh and healthy food versus poor people who are simultaneously too fat and underfed because of a lack of nutritional value in the food they eat. In some countries we have this little kid that asks for the carpaccio, whereas other children don't even know what a carrot looks like, because all the food they know comes from a jar.

From an ecological point of view our current agricultural industry is equally ill advised. Our food chain is completely dependent on our energy supply: oil is the raw material of fertilizers, insecticides and weed killers, and oil is the fuel needed to transport all this food all over the world. And in addition there is the problem of water consumption: the production of one kilo of beef requires approximately 15,000 to 20,000 litres of water.

Intensive meat production has a disastrous effect on the environment. Livestock, responsible for 18% of CO₂ emission, uses up a disproportionate amount of our food and water supplies. Enormous amounts of antibiotics and chemicals find their way into the environment, not to speak of manure surplus and acidification. The cultivation of soy for chicken and cattle feed destroys the tropical rain forest. Shrimp farms are a threat to the mangrove forests that form a natural protection against flooding. Very soon our oceans will be empty of fish. From an economic point of view monoculture, the large-scale cultivation of a single variety of tomatoes or

apples, might be highly efficient, but from an ecological perspective it is not a smart move. Virtually all bananas the world over belong to one specific variety: the Cavendish, which is threatened by a fungal disease. At the same time bananas form the basic source of nutrition for the African continent.

The system is weakened by a huge number of economic problems. Distribution is the major problem, because more than a billion people are still starving. It is rather ironic that an equal number of people are suffering from severe obesity. For a brief moment in time the obese people even outnumbered the starving ones, but ever since the food crisis of 2008 and the financial crisis of 2009 the number of hungry people has been growing at a steady pace. All over the world the people at the bottom of the food chain – the farmers – are experiencing a slew of problems. Farmers are bled dry until they finally give up and move to the city. Around the year 2030 more than half the world population will be living in big cities. It is a fact that it is virtually impossible for a farmer to earn a decent living anymore. With the support of government subsidies and protection mechanisms, the giant corporations of agribusiness produce an abundance of food; the small farmer will never be able to compete with. Should there be even more liberalization of agriculture to give the farmers in the developing countries a chance? The opposition will say that an honest food system will not survive the fierce competition on the world food market, where three companies run the seed market and four players have a monopoly in the buying and selling of grain and oil seed crops, where the almighty supermarket conglomerates push the prices down through the food chain and where China is buying up farmland in Africa.

On the contrary, we need more protection, but of a different kind, in order to safeguard the 'food sovereignty' of the poor countries. Advocates of liberalization point out that 'an unholy trison' of romanticists and nostalgists makes the development of a competitive African horticultural business virtually impossible, that this is the very reason there still is hunger in the world. For as long as it has been around, this large, anonymous food system has brought forth its very own counter-movement in the western world: from the health food stores of the 1970s to the current organic food stores selling pesticide-free food. Next came Fair Trade, a protest against economic injustice aimed at giving the farmer at the bottom of the food chain a fairer share. Some ten years ago we saw the rise of the slow-food movement, which opposed the uniformity of industrial food and the accompanying lack of taste and diversity. In the Netherlands a smart marketing expert of the ecological foundation Biologica came up with a 'adopt a chicken' campaign, followed by 'adopt an apple tree,' in order to reconnect the city dweller with his food and with the countryside. More recently a renewed interest in locally or regionally grown food was imported from the United States, where locavism is a separate movement. Local food equals sustainability; it has not been transported over long distances, it is in season, and it favours small-scale farmers.

Each time you eat, you put a piece of the world into your mouth. From the moment man stopped being a nomad, the stuff we put in our mouths has shaped the landscape

The great thing about sustainable food is that it is usually high quality. The American author Barbara Kingsolver gave us the following delicious observation: "Food is a rare moral arena in which the ethical choice is often the pleasurable choice." In the meantime a growing number of people have become aware of this fact, judging by the popularity of farmers' markets and the increasing overlap between delicatessens and health food stores. Each time you eat, you put a piece of the world into your mouth. From the moment man stopped being a nomad, the stuff we put in our mouths has shaped the landscape. When you look around you, the incongruity and the evils of the food system are clearly visible. The romantic picture postcard image of the traditional mixed farms first and foremost in our mind, thanks to the commercials and the pictures on packaging and labels. But in reality we are stuck with this green industrial landscape of agribusiness (cornfields, closed stables, empty pastures) and a recreational landscape that is only intended for cycling trips. The landscape reflects the separation of functions and the monoculture of modern food production. In the American state of Ohio one single farmer can manage hundreds of acres of cornfields. In the urban landscape there are so-called food deserts, poor areas where apples or cucumbers are not available, where the only food in the stores is processed food. It is an example of tragic irony. Our food system that first came into being in times of food shortage now causes new types of scarcity that are looming on the horizon: fuel shortage, lack of biodiversity, shortage of water and nature. Judging by the food crisis, the debate on climate change, the food scandal in China and the successive outbreaks of animal disease, we have hit a wall.

In the year 2050 the world population is expected to reach nine billion, with the large majority of people living in cities. How will we be able to feed all these people with oil running out and the effects of climate change increasing? The debate between the technocrats and the countermovement is in full swing. Until recently the positions were clear. The technocrats proclaim that we will never be able to feed the world with 'nice' sustainable food. What the world really needs is even more intensive farming, no holds barred, including genetic modification. It is completely wrong to want to halt economic growth by advocating a kind of self-sufficient utopia. The other camp, however, argues that much is yet to be gained by turning production lines into production circles by saving water and by clever imitation of natural processes. Walmart, the American supermarket giant with aisles and aisles stocked with anonymous food, embodies the former point of view. The nostalgic pick-your-own farm, where you can stroll along the strawberry patches in spring, personifies the latter proposition. One of the major problems of our current food system, driven as it is by growth, expansion and world trade, is that it is totally contrary to the circular, local character of nature itself.

One of the major problems of our current food system, driven as it is by growth, expansion and world trade, is that it is totally contrary to the circular, local character of nature itself. Should the production of food for the world population stay closer to nature, and what can we do to reach this goal? The most interesting solutions probably lie somewhere in between Walmart and the pick-your-own farm. In an attempt to bring the technocratic and alternative opinions closer together, the American food writer Michael Pollan points out that progress does not necessarily equal technology and that a back-to-nature attitude is not always driven by nostalgia.

One of those modern solutions with a retro feel is urban farming. Both the urban planners of the western world and the development experts of the world food organization FAO are experimenting with this concept. It will not be possible to transport all the food we need to the megacities of the future, so we will have to grow it inside the city limits. Food chains must be turned into food cycles by returning to mixed farming and by recycling waste and water. Nature can be imitated by means of variable grazing, crop rotation, water purification and the re-use of surplus heat. We don't know if food grown this way will be sufficient to feed the world population of the future. But it seems foolish to focus on one system exclusively, however large-scale it may be. People are gradually becoming more aware of this. All of a sudden, the supermarkets that until recently were locked in a dead-end price war are in a competition over sustainability. There is a heated debate over meat in the newspapers. Before the food crisis of 2008 you were considered slightly deranged when you started a discussion among non-peers about factory farming and unlimited meat consumption. It would seem stranger still that the topic would fill the editorial pages of the newspaper. Concerns about climate change and the outbreak of yet another animal disease have caused a shift in public awareness. Nevertheless, this doesn't mean that we are eating less meat. Food shouldn't have to be explained to you.

One might ask what the ideal 21st century production landscape should look like. First and foremost this landscape must be able to narrow the existing gap between pastoral and large-scale, between nostalgia and industry, between pick-your-own farms and Walmart. This landscape should be able to blend city and countryside, or at least bring the two entities closer together. This landscape should be transparent, showing us where the food is coming from and how much work was involved, but it should also produce more than just 'nice' food. It should be as energy efficient and as environmentally friendly as possible. Preferably this landscape should match the urban world of the 21st century, where origin is no longer a matter of uniformity, where almost every human and organism at one time or another have been transplanted and uprooted before growing back together again. There is another gap to bridge, the one between global and local.

In a landscape like this, everyone should have his or her feet firmly planted in the mud. In a landscape like this, city dwellers will inhabit their own pantries again. Food shouldn't have to be explained to you, because you would know where it came from, and why.



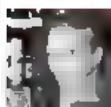
PARK SUPERMARKT

Kies een persoon »

Kies een vraag »

02

WAT MAAKT PARK SUPERMARKT RELEVANT?



Monica van Leeuwen
Eigenaar traiteur Chezmoi
Rotterdam

Het maakt mensen bewust van hun voedsel, waar het vandaan komt en hoe het wordt geproduceerd. Een peen komt uit de grond, niet uit een potje. Ook het creëren van bewustzijn ten opzichte van het transport van voedsel of seizoensgebondenheid is belangrijk.



Greetje Mink
Onderwijzeres Basisschool
De Blijberg Rotterdam

Het idee om het gebied om de stad te gebruiken om de stad van eten te voorzien en daarmee ook weer een zekere schaarste te creëren spreekt mij erg aan. Ook het combineren van het nuttige (voedsel) met het aangename (recreatie) lijkt mij heel zinvol.



Jan Willem v/d Schans
Onderzoeker
stadslandbouw Landbouw
Economisch Instituut
Wageningen

Park Supermarkt laat zien dat er heel veel verschillende dingen in de huidige supermarket worden aangeboden die niet (meer) in het Hollandse landschap zoals wij het kennen geproduceerd (kunnen) worden. Door dit assortiment wel op het Hollandse landschap te projecteren laat Park Supermarkt zien welke kunstgrepen er uit gehaald moeten worden in het landschap om dit wel mogelijk te maken. Het laat dus zien dat een supermarket assortiment volledig lokaliseren alleen kan als we het landschap ingrijpend veranderen (en gebruik maken van nog niet ontwikkelde technologie, de microklimaat fontein etc).



Herm Jan van Dijk
Eigenaar Landmarkt

Deze is extreem relevant voor zowel consumenten (echt vers product met duidelijke herkomst) als producenten (andere verdeling van kosten en opbrengsten over de keten, verbandig met klant).



Eric Luiten
Provinciaal adviseur
ruimtelijke kwaliteit
Provincie Zuid-Holland

Een gedachte- en ontwerpexperiment om de toekomst van Midden-Deildand in een concreet stadsregionaal perspectief te plaatsen.



Henk Olink
Directeur ruimtelijke
ontwikkeling Ministerie van
Infrastructuur en Milieu

Park Supermarkt sluit aan bij deze tendensen, die wellicht op termijn kunnen uitgroeien tot een transitie. Ook de aandacht voor de logistieke aspecten van voedsel spelen een belangrijke rol. Een andere mogelijke koppeling is met het thema krimp. In Duitsland bijvoorbeeld worden binnenstedelijke locaties soms omgevormd tot volkstuinwijken. De stad als productielandschap is echter nog een heel ander perspectief. Daarbij komen ook vragen rondom leefomgevings- en milieukwaliteit aan de orde net als transport. Interessant vanwege de combinatie van duurzaam energie- en landgebruik in combinatie met voedselvoorziening, recreatie en leefomgevingskwaliteit dichtbij de stad. Meervoudig ruimte- en hergebruik.



Diane Krabbedam
Directeur The Beach

Park Supermarkt sluit aan bij initiatieven en kenmerkende behoeften om directer betrokken te zijn bij voedselproductie. Kleinschaligheid en nabijheid vraagt om een flexibele opzet die in te passen is in het (rand)stedelijke landschap. Het is een intelligent antwoord op de overspannen relatie tussen stad en land, tussen de burger en zijn voedsel. Maar ook dat Park Supermarkt inzet op hands-on betrokkenheid van bewoners/gebruikers en een appel doet op de kennis van afdelingsmedelers en zo mensen met elkaar in verbinding brengt.



Kees van Oerschoot
Opdrachtmanager
buitenstedelijk groen
Stadsontwikkeling
gemeente Rotterdam

Park Supermarkt laat ons inspirerende voorstellen zien over kansen voor stadslandbouw rond de stad. We zien het niet als een letterlijk voorstel, maar als een manier van kijken naar de directe omgeving van de stad. Een vernieuwde manier van kijken naar de stad-landrelatie is voor een stad als Rotterdam ook actueel.



Gerard Titulaer
Directeur
gebiedscoöperatie
Oregional Nijmegen

De afzet van regionale producten via webverkoop (gemak) en beleving in de Parksupermarkt (funshopping) moeten elkaar versterken. In de Oregional Parksupermarkt worden stad en voedselproductie met elkaar in balans gebracht. In het 'Park' (ca. 15-25 ha land) staat het beleven van het boerenland en alles wat dat te bieden heeft centraal (recreatieve, educatieve, informatieve functies). Supermarkt duidt op het assortiment aan voedsel dat in het 'Park' wordt verbouwd, kan worden geproefd en verkocht. Boodschappen doen bij Oregional Parksupermarkt biedt de consument de kans op te zien waar zijn voedsel vandaan komt, hoe de producten worden verbouwd en biedt een beeld van de regionale diversiteit aan voedsel.



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SIEMENS

Farm in the city could be supermarket of the future

by George Webster, CNN

Updated 11:05 AM EDT Tuesday, September 15, 2010

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Architects designed a modern food and supermarket on site per officials

Architects designed a modern food and supermarket on site per officials

(CNN) - Big cities are rarely home to thriving farmlands, but a group of Dutch architects hope to change that with the "Park Supermarket" — an urban farming project that will attempt to grow and sell all the food of a modern super market in one place.

The firm behind the proposal, Rotterdam-based Van Bergen Kolkpa Architects, intends to produce everything from risotto rice, to kiwis to Tilapia fish all on one 4,000-acre plot of disused land in Randstad, Holland's largest metropolitan area.

In defiance of the country's moderate climate, the architects say they have devised a system to control the park's outdoor environment, using old and new farming technologies to simulate Mediterranean and tropical climates in an ecologically sustainable way.



Flowfood Diner

Culinary planning in the Dutch polder

Flow food is a spatial-culinary view of the future of the Dutch landscape in the year 2070. By unleashing both the salt and fresh water forces on the Dutch landscape an up till now unknown rich biodiversity will start to flourish. This future landscape will take many spatial forms and characteristics. On the occasion of the second Architecture Biennale Rotterdam this new landscape can be 'tasted' through a unique one off dining event.

Due to climatological changes rainwater patterns will drastically alter and the sea water table will rise. The current flexibility and absorption capacity of the Dutch polder landscape will no longer be sufficient against the forces of the rising water levels. On top of this geological forces will rotate the Dutch geological plate over a diagonal line. The east will rise further and the west will sink even deeper under sea level. Water in all forms will become an increasingly dominant factor and will drastically change the Dutch landscape. What is the culinary potential of these future wet and dry landscapes?

The basis of the new landscape is the result of an exchange between salt and fresh water. Future coastal developments create gradual transitions between the land and the sea such as lagoons and marshlands where algae and sea vegetables flourish. High drifting sand dunes create a wild environment for juniper berry bushes and sea buck thorn that can create tasty wines and preserves.

Upcoming water levels turn the lower parts of Holland into a rich and diverse landscape. The once man-made landscape offers new changes for a extensive agrarian production landscape. Percolating salt water creates fertile brackish soil for sea asparagus and sea lavender as well as shellfish, eel and birds. Within this salty landscape urban settlements create their own fresh water environments giving rise to small scale farming of delicious produce such as watercress, mint and rocket.

The terraced mounds of the most eastern areas create first wet and then dry soils for rice, barley, oats and grain crops. Further inland flourishing rivers flow into fishponds for the farming of bass and carp fish. Forests and foreland take over the milk and meat production, previously in the polders, on a small scale basis.

The dominant role of both fresh and salt water in the near future is regarded as a positive factor for the landscape and its productive qualities. It means a transition from defensive planning to be able to produce our butter, cheese and eggs to a dynamic 'culinary planning'.

Flow food is schematically illustrated by a cross section over the Dutch landscape showing its new culinary potential. On occasion of the second Architecture Biennale Rotterdam the produce of this new landscape will be served during an one off unique dining event. THE chance to taste the new Flow Food landscape.

**SALT
+ WET**

SEU

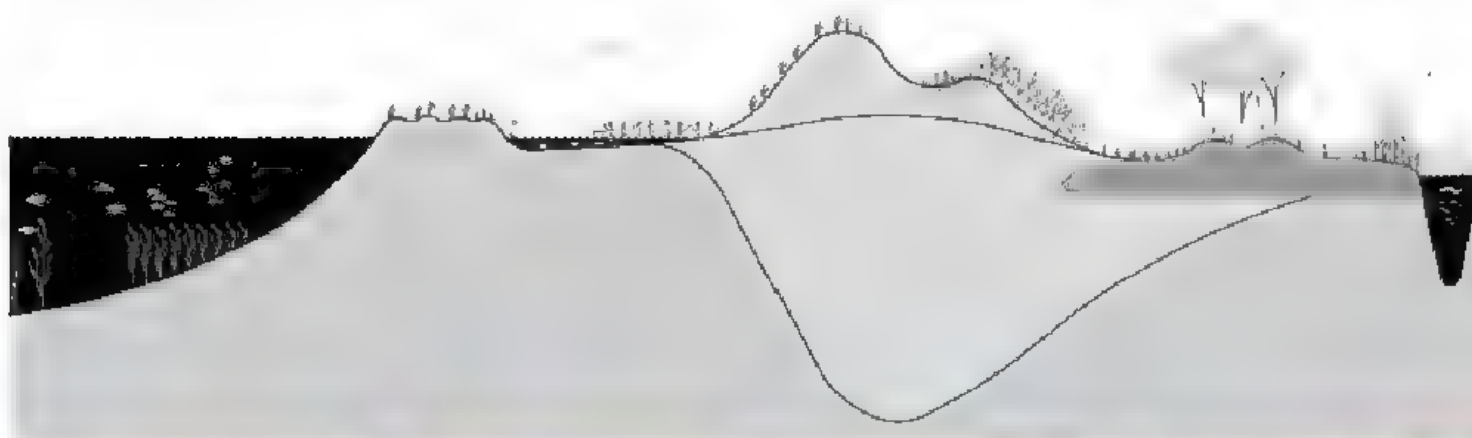
**SALT
+ WET**

**LAGOON: TIDE LANDSCAPE
NEW DEVELOPMENTS**

**SWEET
+ DRY**

DUMES
THE HAGUE

**SWEET
+ WET**

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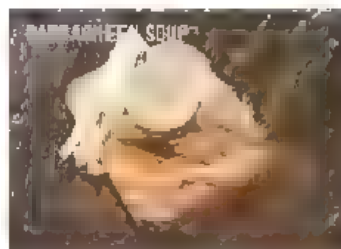
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1. **Identify the main idea**
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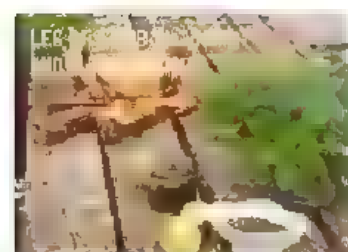
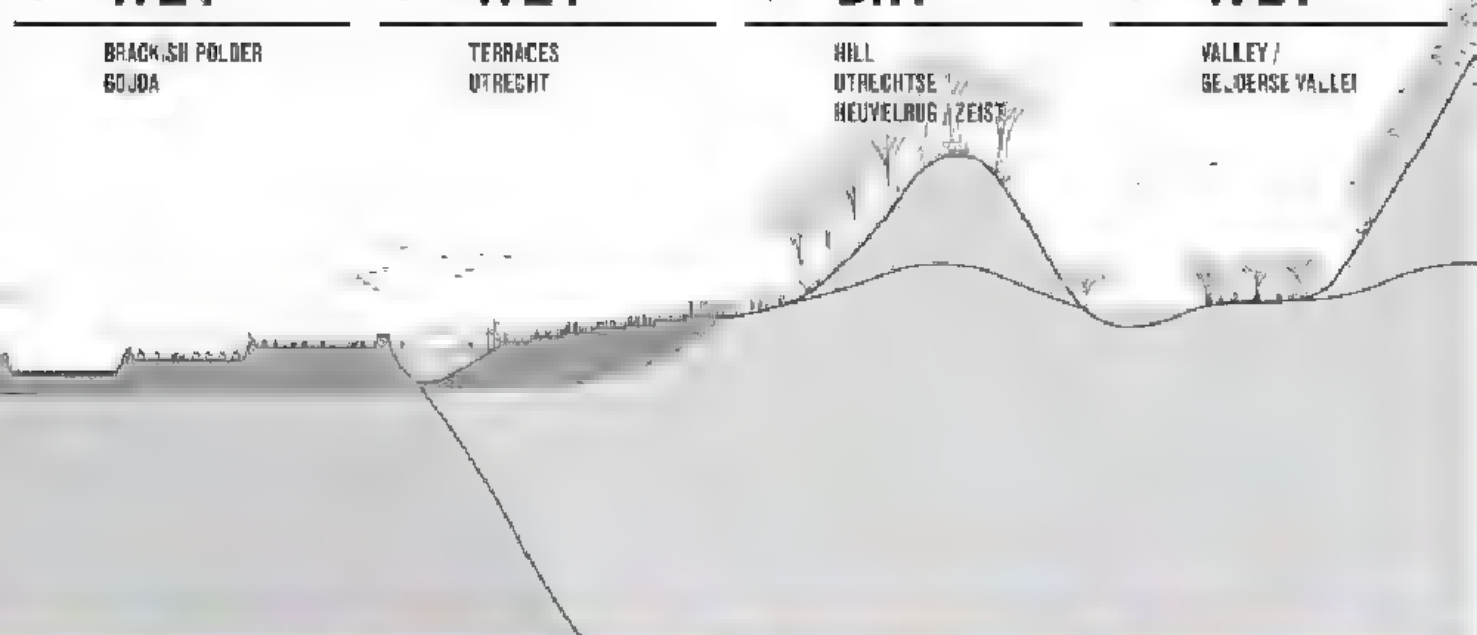
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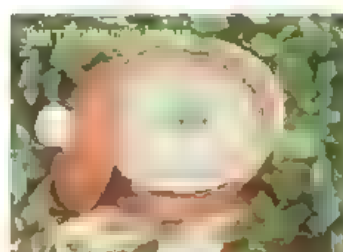
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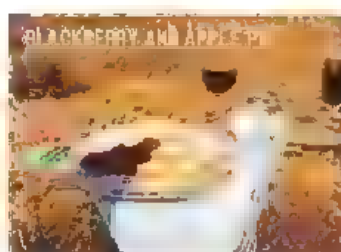
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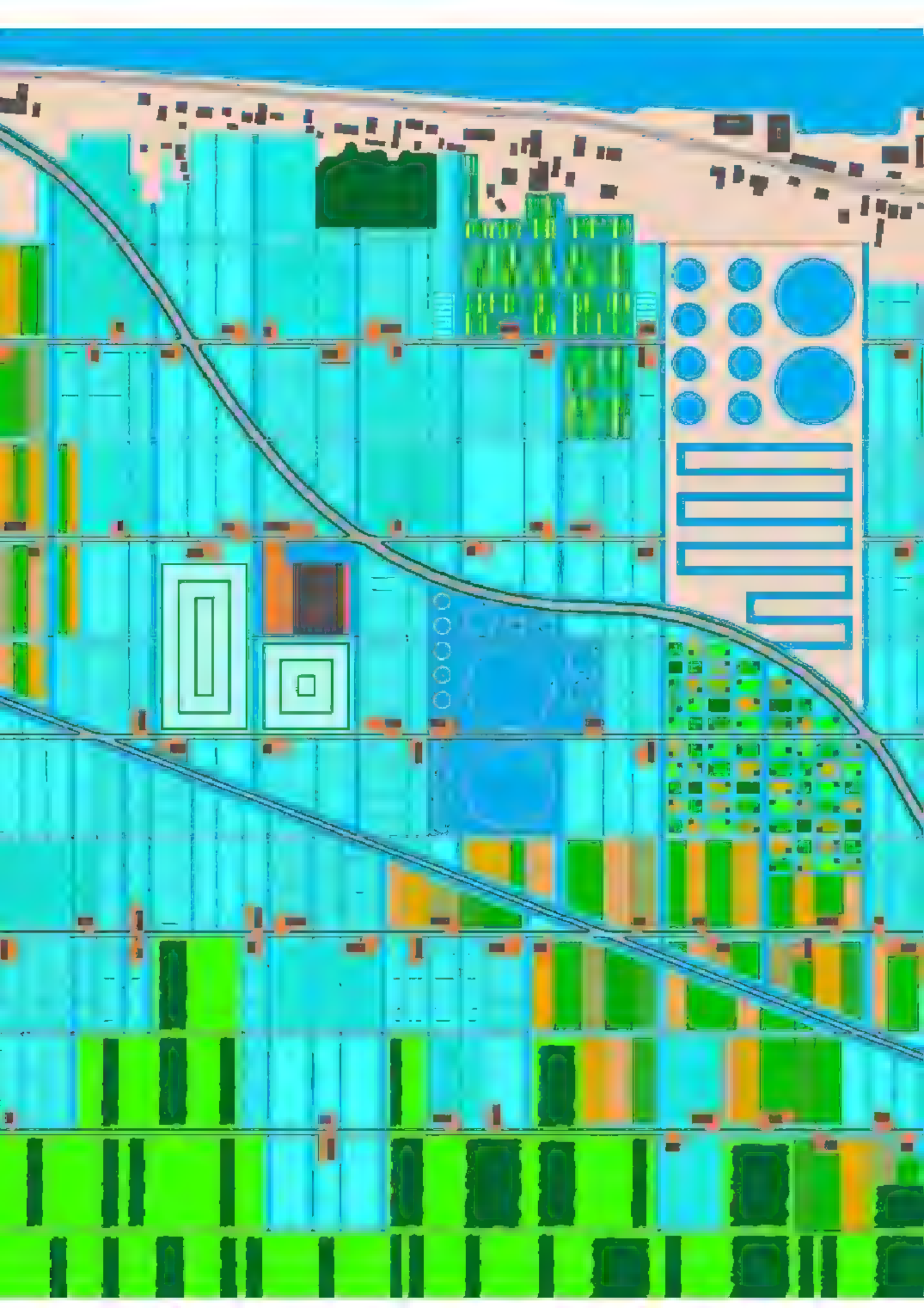
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Water Hectare City

Living in a wet polder

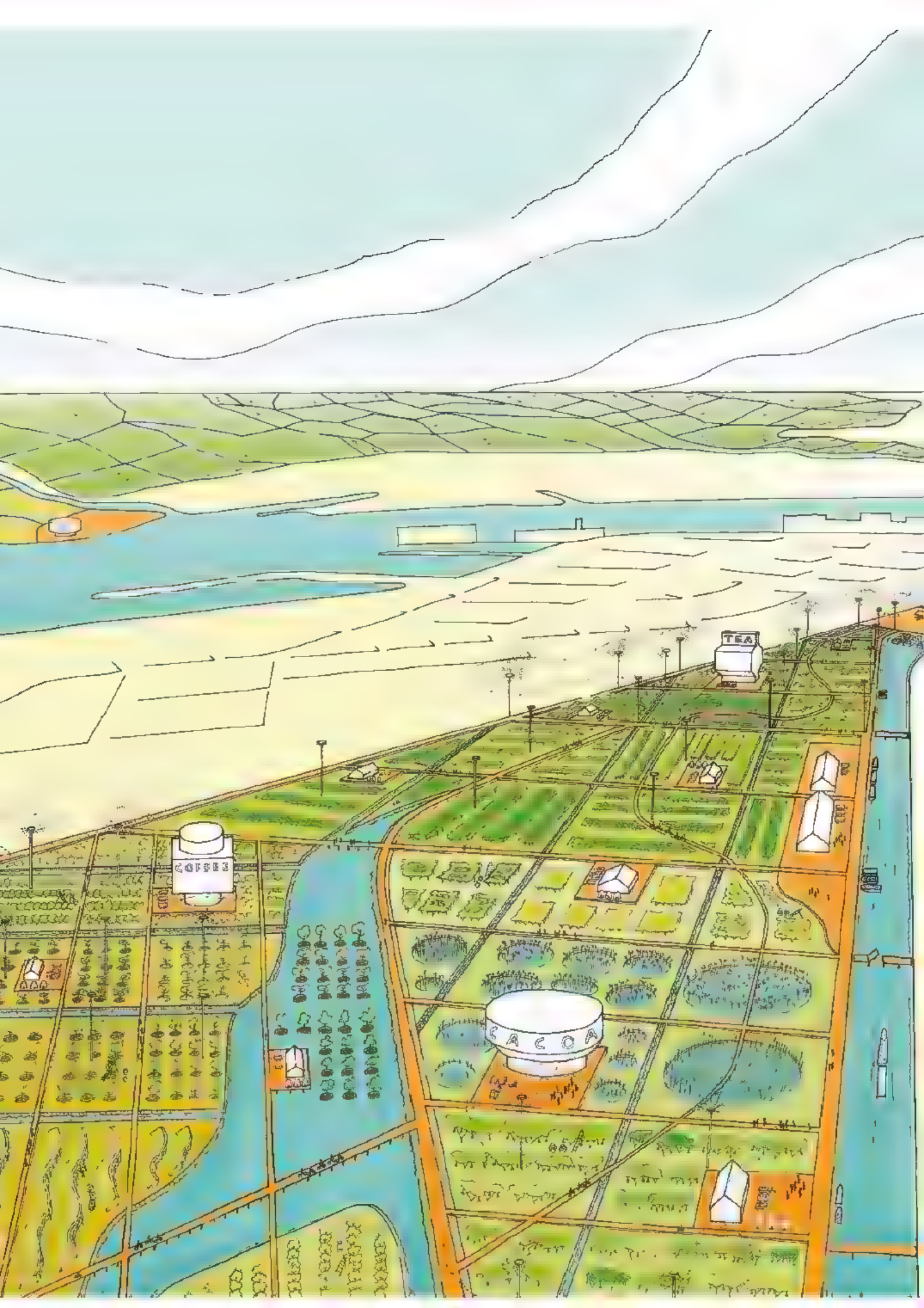


Water hectare City is a development strategy for 'Building with Water' around the city of Gouda. The aim of the project is to develop a sustainable balance between exclusive types of housing with agrarian gardens in the typical Dutch water polders.

Basis of the development are a range of small water-based agrarian plots of around one hectare combined with a variety of large houses. Due to climate change, soil compaction and salt water intrusion, the nature of the existing agrarian landscape will inevitably change. Using the differentiation in soil types and dynamic water levels creates the opportunity to cultivate an enormous variety

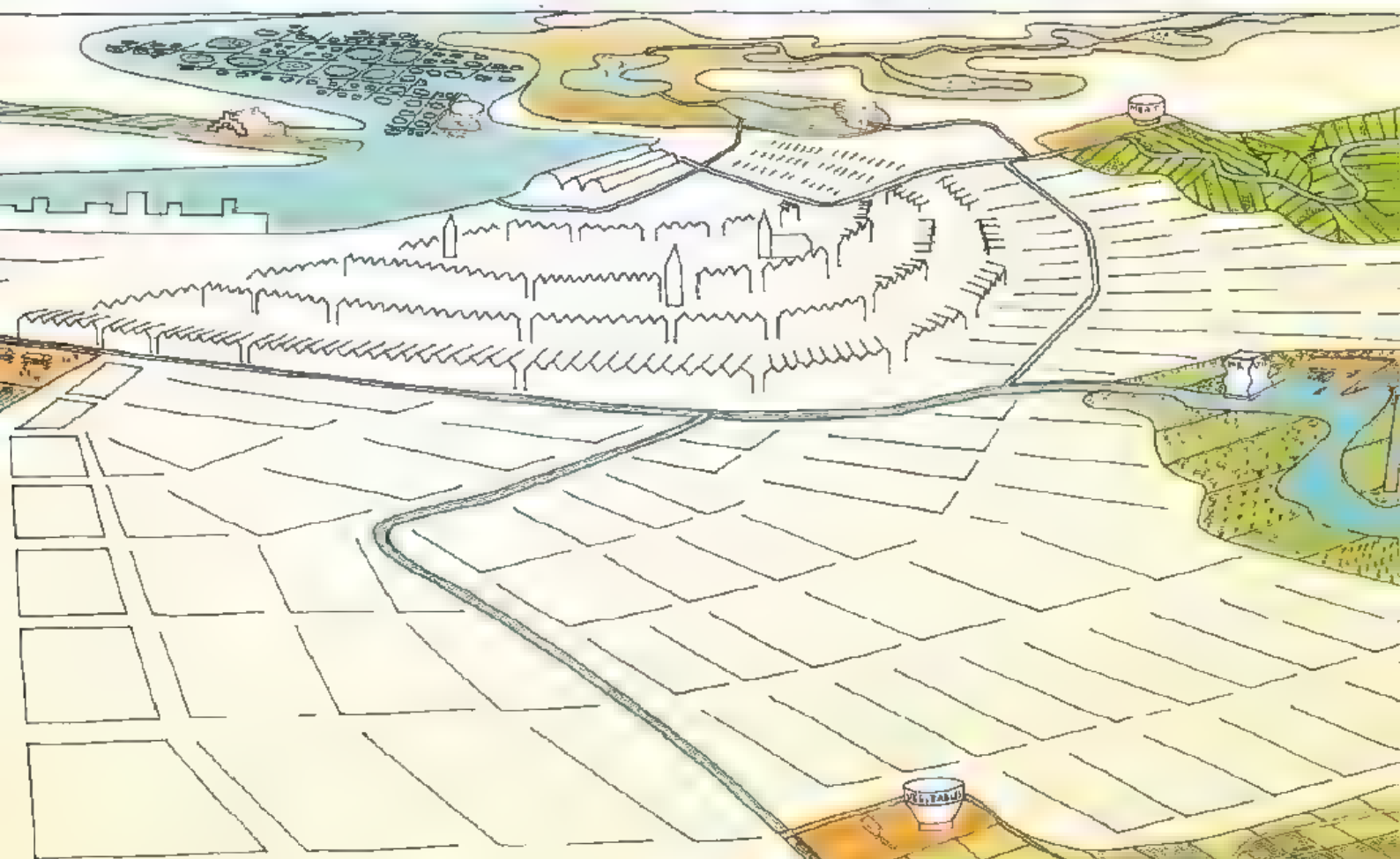
of agricultural produce: water hectare plots with watercress, water mint and sweet water fish in ponds. Cascading water plots with wild rice and salt marsh plots with algae, glasswort and sea lavender.

Water hectare City defines a new 21st-century understanding of the historical manor estates and country homes around the City of Gouda. A strategy that gives new meaning to Gouda as the gateway to the Greenheart of the Randstad metropolis.



Amsterdam Homemade

The green fingers of the city canals



Due to urbanization the Dutch polders, once the icon of our food production landscapes, have over the past centuries come to lie like parks in the Amsterdam metropolis. These green wedges can be developed into a Landscape Supermarket. Prompted by the growing demand for recognizable food, Amsterdam Homemade is directly involving city dwellers from all cultures in food production, which stimulates local economies and entrepreneurship.

By making use of the available soil types and differences in water levels, ideal conditions can be created for a wide variety of produce: pandan and risotto rice is cultivated on the water terraces of

the Waterland wedge. Tilapia fish is reared in water basins in the IJ Wedge and kiwis and avocados grow along undulating fruit walls in the Amsterdamse Bos Wedge. The requisite landscape climates are created by means of old techniques such as heat accumulation in serpentine walls and modern techniques such as insulating vapour roofs and the use of thermal heat. Homemade is divided into 1 hectare plots, which can be rented and managed by entrepreneurs in a cooperative form and by city dwellers. The produce is sold in Amsterdam Homemade's market buildings. The combination of open space and entrepreneurship of consumption and recreation can thus be central to the development of Amsterdam's metropolitan park landscape.



1 Bulbsheds in a protected landscape

Growing & Blooming

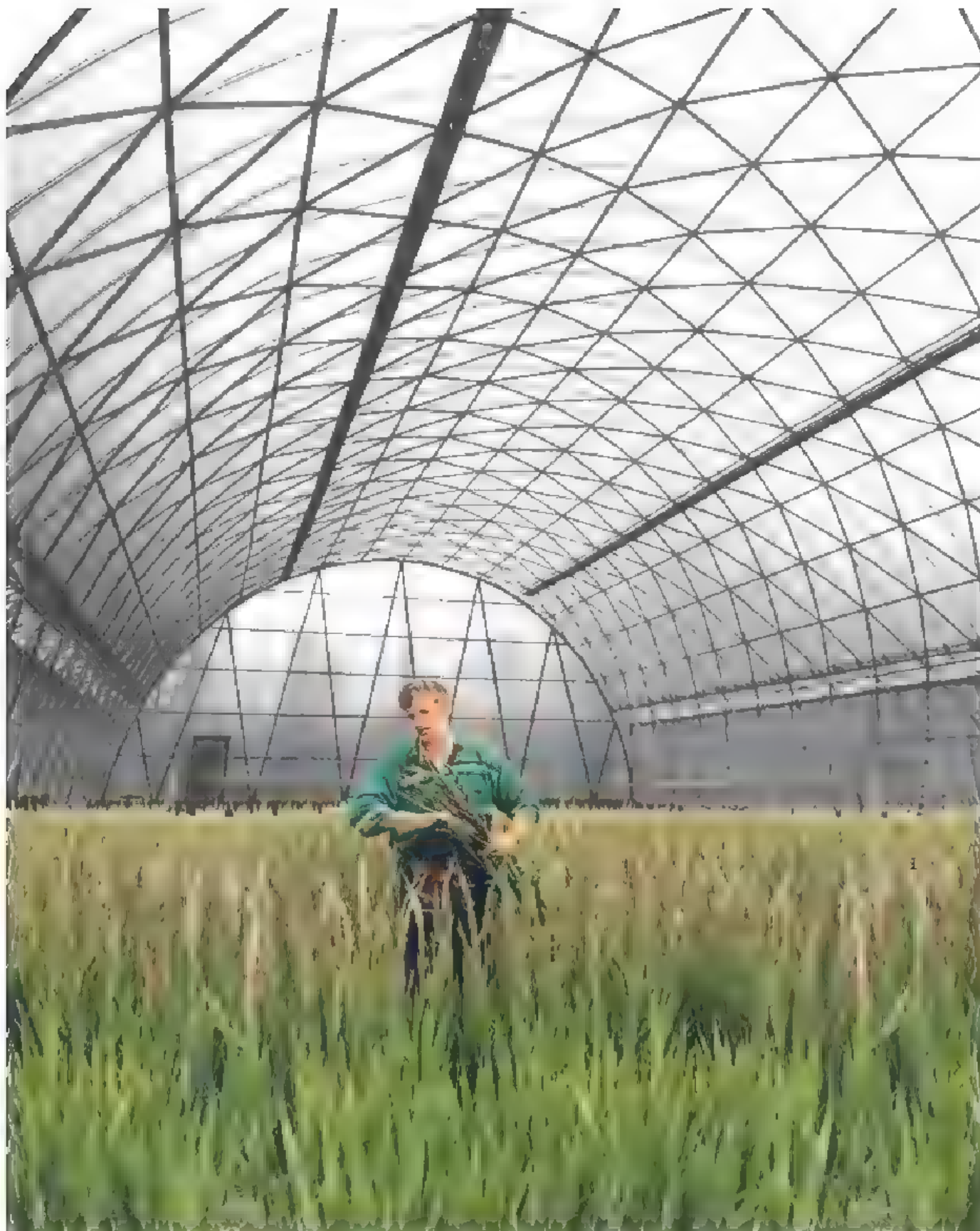
Bulbsheds in a flowerlandscape



Growing and Blooming is a development strategy for the contemporary bulb growing business within the culturally historical landscape of the Dune and Flower bulb Region in west Holland. The representative face of the bulb growing businesses of marketing, tourism and sales sit proudly as family 'homesteads' along Bulb Boulevards. While the new free-standing bulb sheds are isolated

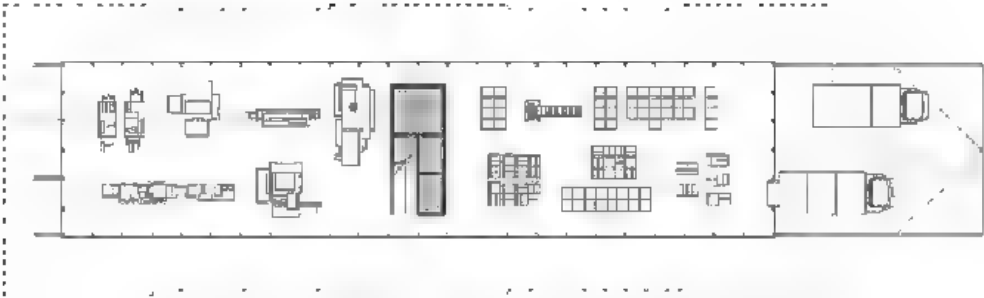
production points in the familiar bulb fields and combine traditional storage techniques with modern cultivation and processing forms in a region-specific typology. The strategy Growing and Blooming forms a balance between the preservation of the open, culturally important landscape and the present economies of bulb cultivation and tourism.

1 Impression of the production hall

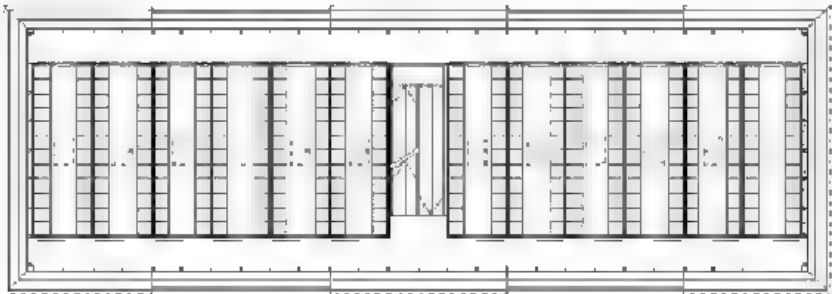


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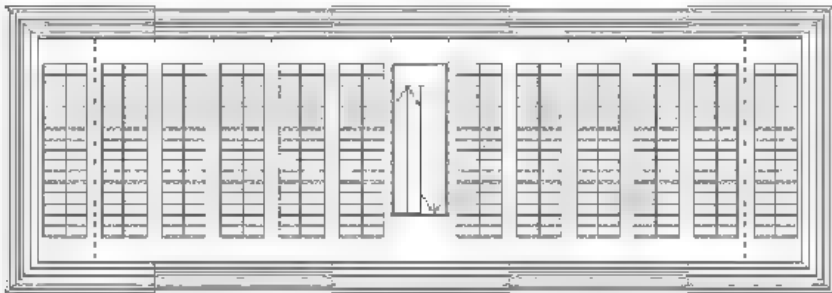
- 2 Floorplan ground floor
- 3 Floorplan 1st floor
- 4 Floorplan 2nd floor
- 5 Section



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Oregional Plaza

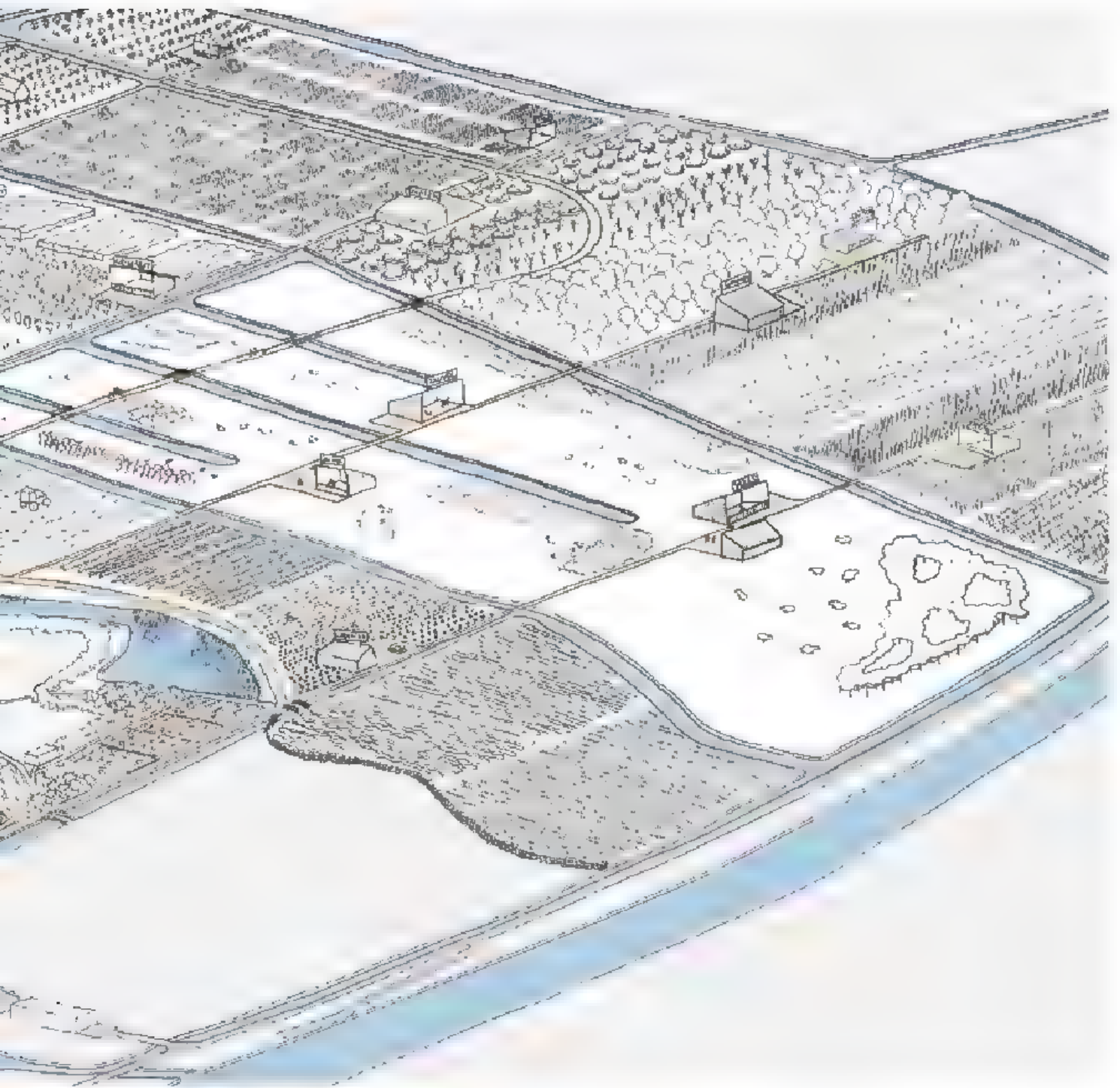
Showplace for the Cooperatives





The design aims at a Landscape Supermarket. A park-like setting showcasing in an attractive way how the Oregional farmer's products are cultivated. Therefore the existing small-scale parceled landscape will be developed in its original and characteristic way. You will find orchards with fruits, fields with vegetables, fishponds and cattle on grasslands. Along undulating snake walls Mediterranean crops grow in microclimates like grapes and olive trees.

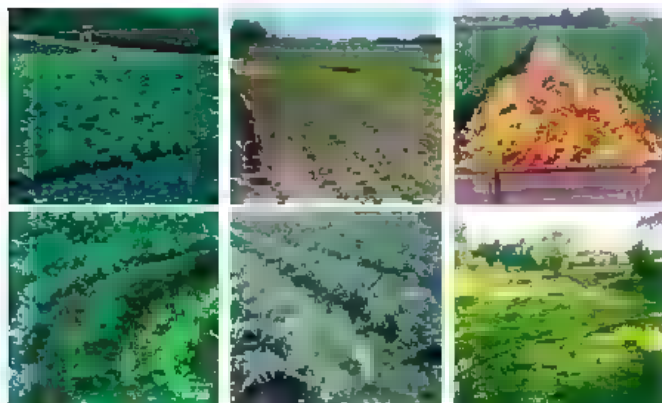
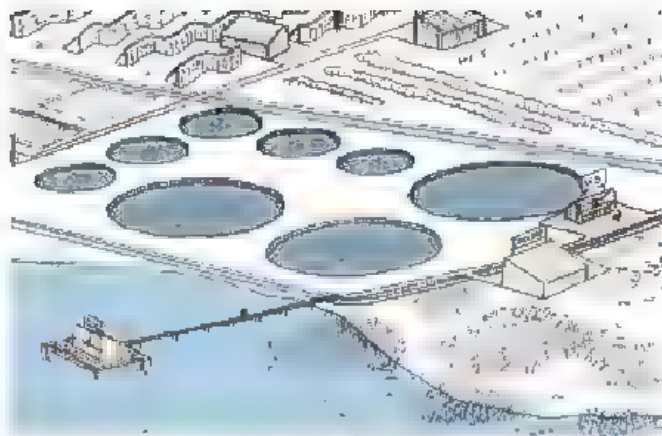
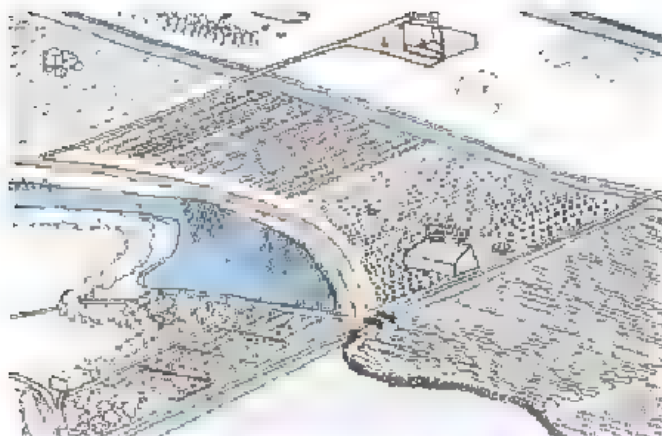
Along the fields of the Landscape supermarket small paths and farmer sheds are situated that inform the customers and allow for opportunities to taste and buy the products. Diagonally through the area runs a recreational bike and walking path that showcases an overview of the food assortment and its production landscapes.



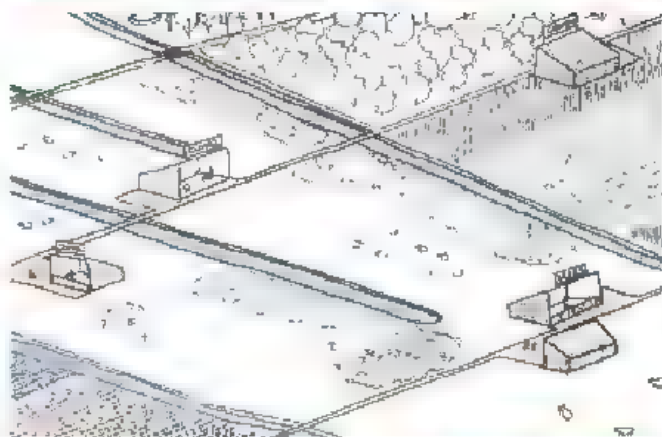
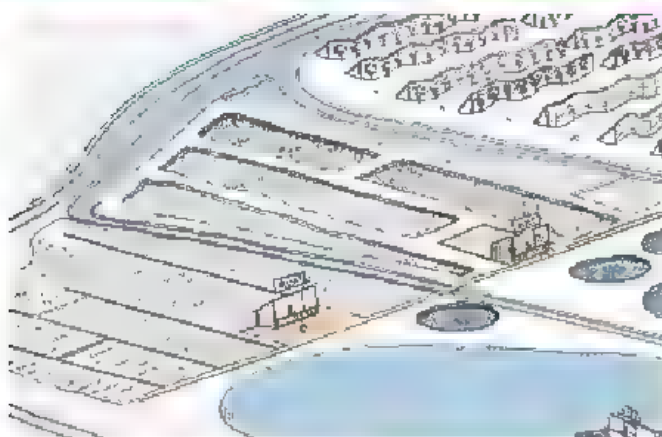
Along the Ooyse band dike the entrance of the Park Supermarket® Oregional is situated. This entrance area with two existing buildings is equipped with a restaurant terrace that offers a splendid view on the Park Supermarket. A wide stair over the dike leads the visitors into the Landscape Supermarket. A small market square in between the building connects the complex to the old river waal. Here the natural river landscape is connected with the culture landscape of the Ooijse Schependom.

The former industrial warehouse and railway station building are reused and transformed into a fresh market and entrance building. Here the visitors can taste the products in the restaurant and shop their groceries in the indoor fresh market. Behind the buildings the parking facilities for bikes and cars are situated.

- 1 Vegetable department
- 2 Fish department
- 3 Rice department
- 4 Meat & dairy department

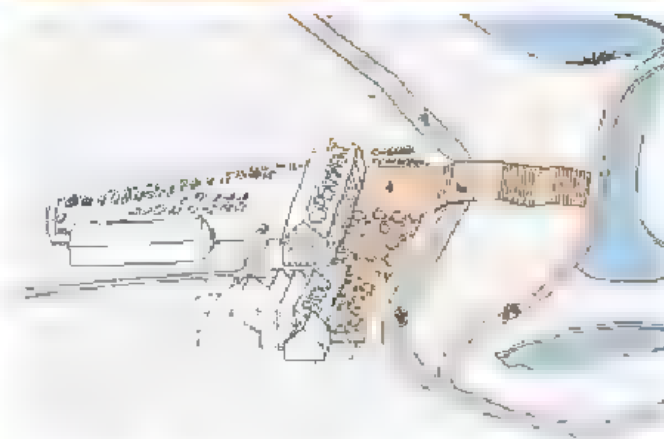
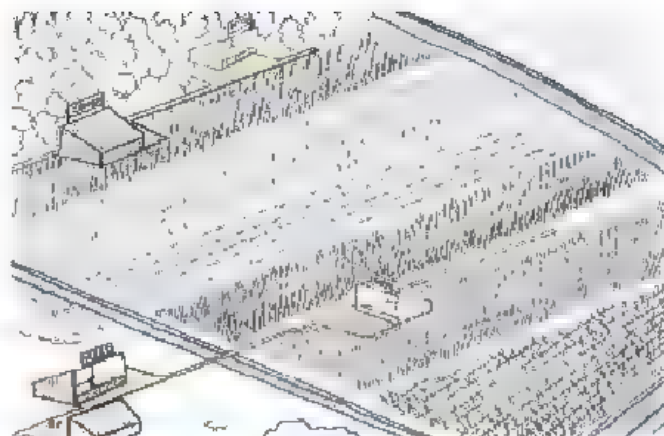
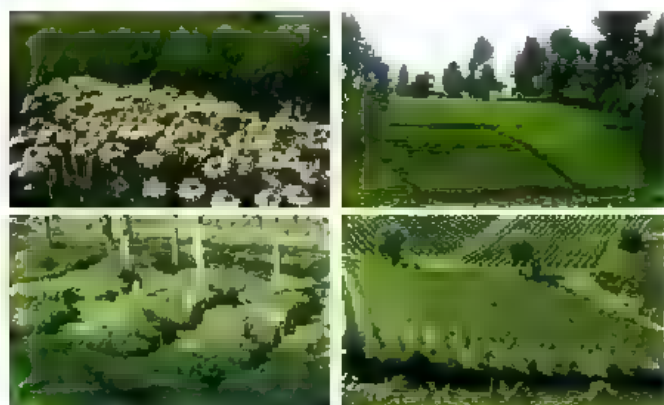
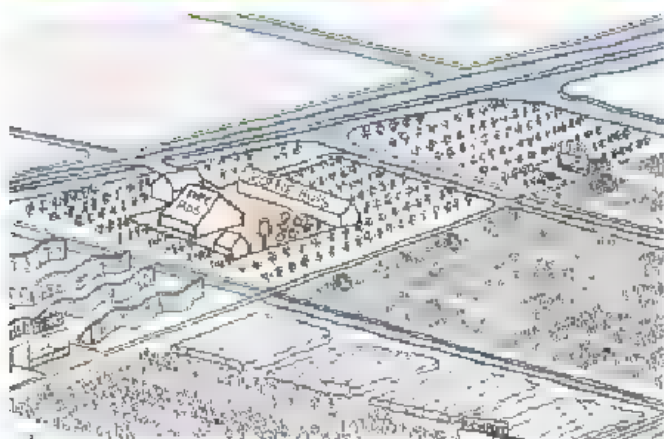
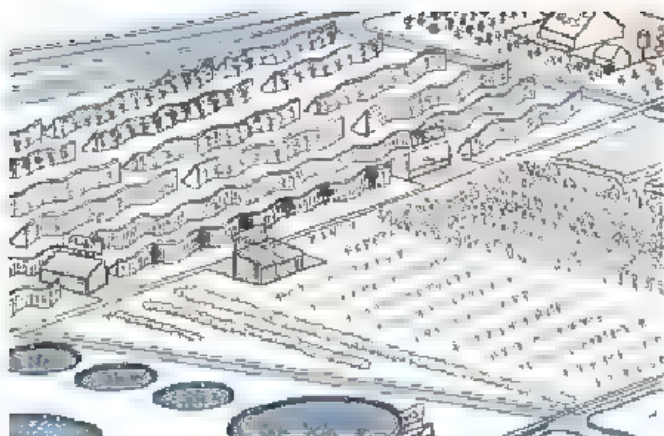


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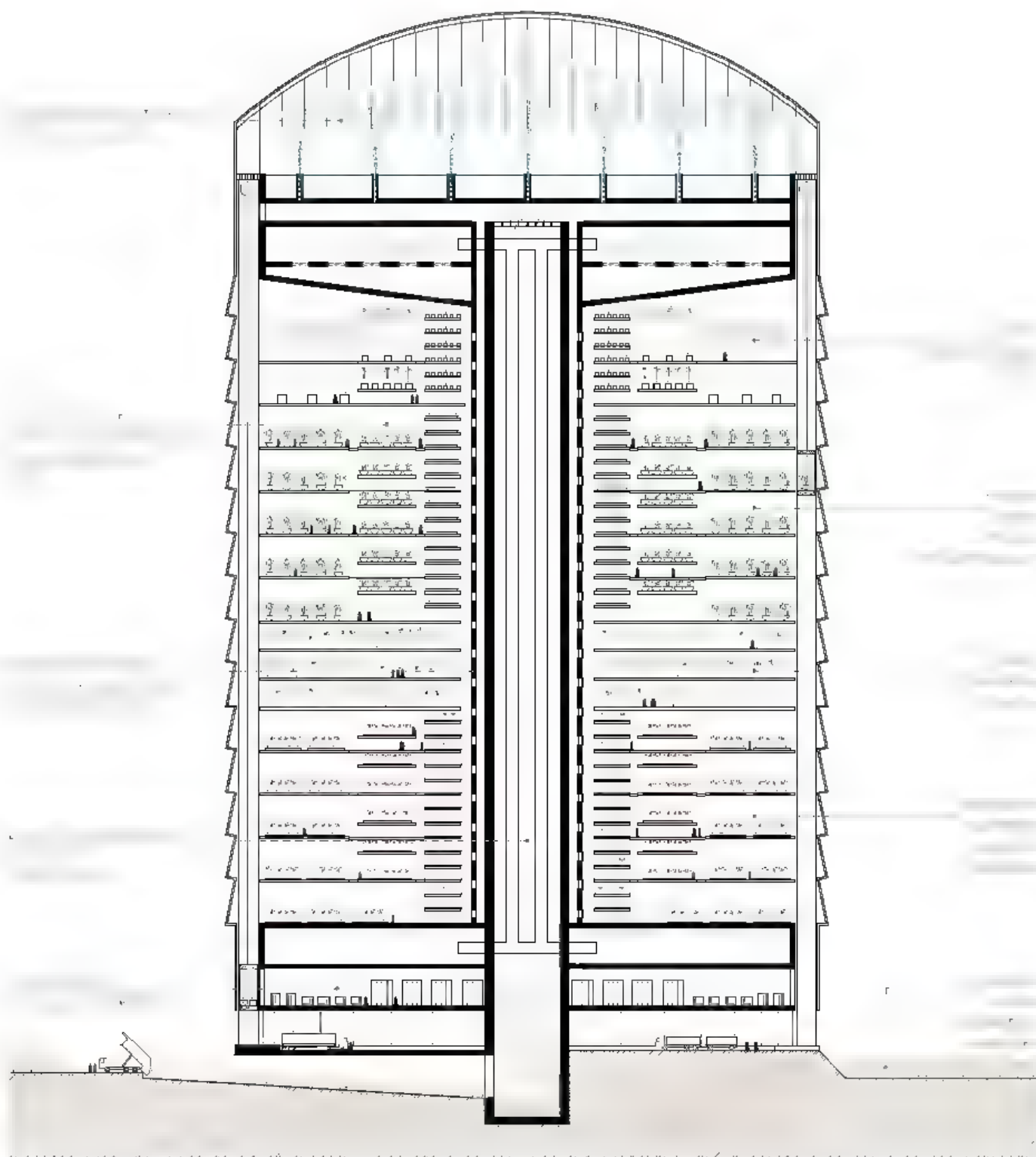
- 5 Fruit department
- 6 Wheat department
- 7 Coffee & tea department
- 8 Indoor Sale



5 6

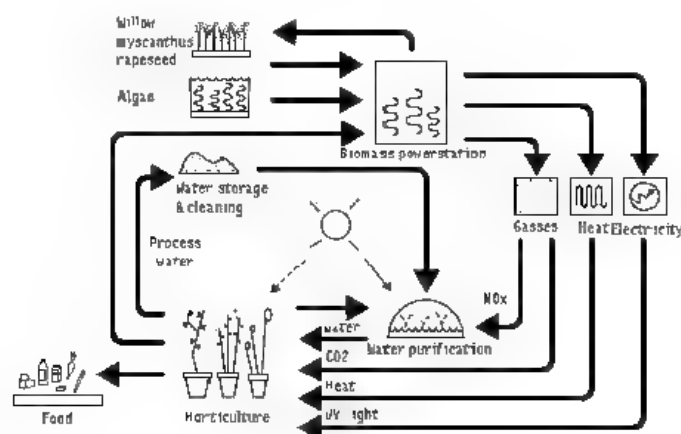
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1 Section Greenhouse power station



Greenhouse and Land

High-tech and Low-tech Greenport Westland



'Greenhouse en Land' is a look into the future of market gardening in Westland, a large horticultural area west of The Hague. The design philosophy sees greenhouse cultivation as no longer the focal point of a marketing system but part of a production ecology. Economically one of the areas in the Netherlands with the most potential, this agricultural region is run like a business park and is no longer soil or climate bound. Extreme urban pressure, water problems and energy shortage question the future and the continuing development of this area as it now exists. To this end the proposal constructs a series of new typologies for nursery cultivation that engage directly with the surrounding landscape, enable a high-grade production and enhance the residential and recreational qualities of the site.

Kas Centrale – Glasshouse Power Station

This design is a symbiosis of glasshouses and a small power station – a Glasshouse Power Station. The building is to stand in areas where energy crops are cultivated. These provide the power station with the fuel it requires. The Glasshouse Power Station's ecological cycle is based on generating electrical energy. A part of this electricity is used to provide the plant material with enough light

to ensure its rapid growth. The residual heat produced when generating the electricity is sufficient to warm the greenhouses, creating a favourable balance of energy. Flue gases produced by the power station, such as carbon dioxide, stimulate the plant cultivation. At the same time the Glasshouse Power Station itself provides the water purification necessary for intensive crop cultivation by bringing together nitrogen oxide and the gases produced by fruit and vegetables in the top of the building. This and direct sunlight together create ozone, whose water-purifying effect is exploited to clean water pumped up from the storage basins. Grey residual water flows back into the storage basins where it is purified naturally.

Salt-marsh Nursery

Much drained land in the Netherlands is slowly becoming brackish as the water level there steadily drops, allowing salt water to percolate upwards. These brackish areas present a threat to conventional agriculture. The Salt-marsh Nursery is a form of field cultivation that answers the call for new products. These products are cultivated extensively in a brackish landscape

- 1 Impression Glasshouse Power Station
- 2 Impression Salt marsh Nursery
- 3 Impression landscape

1



2

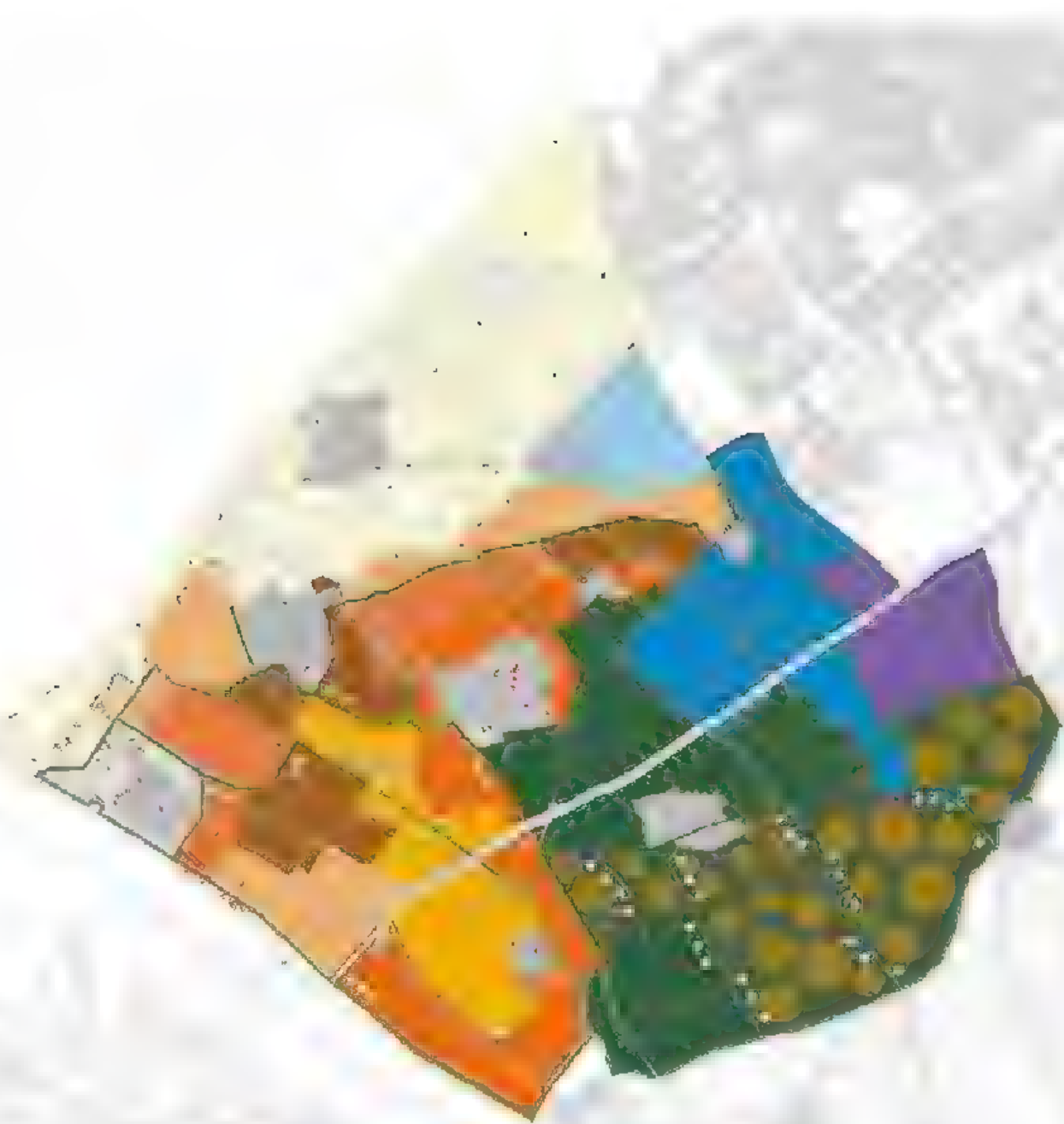


3



1 Zoning map

2 Landscape section



1

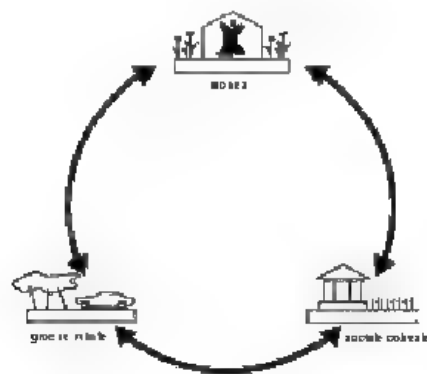


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Co-Housing Hoogvliet

Harvesting climbing fruits in the garden city



Co-Housing Hoogvliet houses three communities for families and one community for mentally disabled people. Each community is grouped around a garden for children at play, a community barbecue and growing food.





















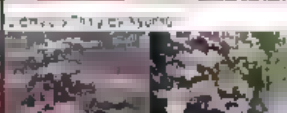
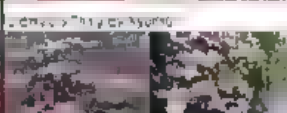




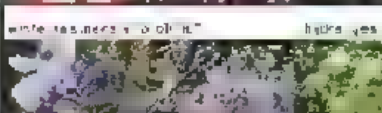





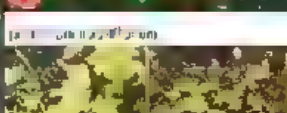
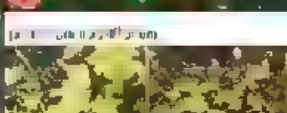
Collective resources such as rainwater and compostable waste are used for watering and fertilizing this green oasis. The 'Garden Houses' of four to six homes are orientated towards the sun, the gardens and the nearby canal. Each collective is embraced by a growing green façade offering different flowers and fruits by the season.

The project is located in the postwar garden city of Hoogvliet. This new town was planned to accommodate the growth of the city based on the social ecology of one type of family. This resulted in spatial character of repetitive apartment blocks in a sea of green public space with almost no private outdoor spaces. But nowadays the contemporary city has grown to a complex ecosystem of social

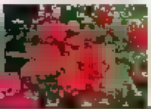
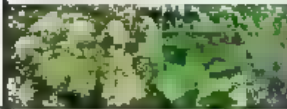
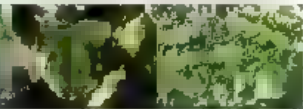




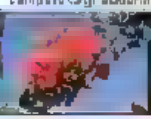



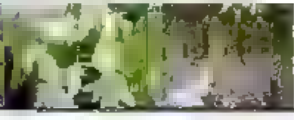


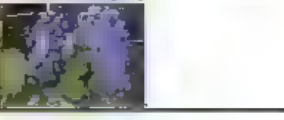
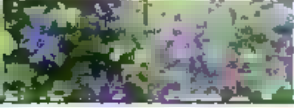
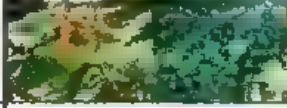
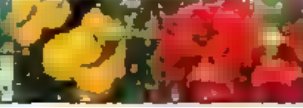


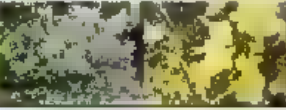
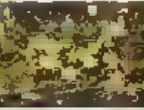
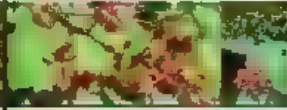
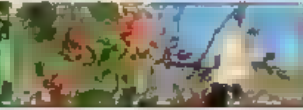
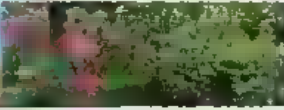
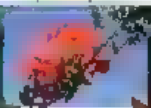
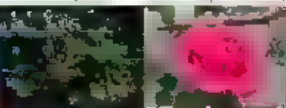

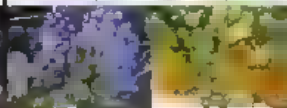






behaviours and relations with the green and natural surrounding of public spaces. Co-housing project takes the opportunity to reinterpret the ideal of the garden city to contemporary social and ecological conditions.

The new small collectives consist of around ten family houses with private gardens around a communal garden. Here room is created with simple green facilities for daily meeting opportunities. For instance space for rainwater catchment to water the gardens and wash cars and space for compostable waste. But also bicycle parking and mailboxes. The gardens are surrounded by a green façade. For this vertical garden a choice of green flowers, fruits and vegetables is developed together with the gardener of the communities. In this way today's social ecologies are connected in simple ways to the green and natural space of this Garden City.

1 Choice poster from which residents choose their own planting

STORMVOGEL Naberschap Moogvliet		BORDER GARDEN		FLORAL GARDE	
Vestib - Estrade Projecten van Bergen Kolpa Architecten					
A	North-east sun hedge adjacent to building bordering on public area				
					
B	North-west sun hedge adjacent to building bordering on private area				
					
C	North-west and south-west sun hedge, bordering on public area				
					
D	North-west sun hedge adjacent to building bordering on garden or public area				
					
E	Sun from all sides, free-standing hedge bordering on communal area				
					
F	South-west and south-east sun hedge bordering on public area				
					
G	South-west or south-east sun hedge adjacent to building bordering on garden or public area				
					
H	South-west and south-east sun hedge, bordering on public area				
					



N	FRUIT GARDEN
<p>rosa "backlundehorn ridders" </p>	<p>hyd. anosa petiolatus   </p>
<p>rosa "pink cloud"  </p>	<p>hydrangea serrata "profific" </p>
<p>camellia fagi abdara "madame jalen"   </p>	<p>apple pear "lappa" </p>
<p>hydrangea f. arbutifolia "white noddy" </p>	<p>hydrangea petiolatus   </p>
<p>hydrangea "lockwood superba" </p>	<p>rubus arcticus   </p>
<p>camellia fagi abdara "madame jalen"   </p>	<p>rubus phoeniceus   </p>
<p>camellia fagi abdara "madame jalen"   </p>	<p>hydrangea petiolatus   </p>
<p>hydrangea "white noddy" </p>	<p>hydrangea petiolatus   </p>





Van Bergen Kolpa Architects

Credits Architecture for Food

Project	Client	Location	Advisors	Year
Worlds of Food	Palensgroep Hassad Food	Doha, Qatar	Leirwageningen J. P.	2012
Cofco Demonstration Centre	Cofco	Beijing, China	Leirwageningen J.R. Nier Rolien Loos van Vliet	2013
Food Art Park	Archistroyanie	Nikola Lemvets Pusland	BuroMoscow Architects	2012
Park Supermarket	Stroom Provincie Zuid Holland	Midden Delfland	Alterra Wageningen UR	2009
Original Plaza	Coöperatie Origional	Nijmegen	Alterra Wageningen UR	2009
Green Deal Urban Agriculture	Ministerie Economische Zaken Ministerie Infrastructuur en Milieu	Nederlandse Gemeenten	Leirwageningen J.R. De volharding Breda Priva Nederland bv	2012-2013
Amsterdam Homemade	Arcam Architectuurcentrum	Amsterdamse Scheggen		2012
Greenhouse and Land	Prijzsvraag Prix de Rome	Tuinbouwgebieden van het Westland	IVAM Amsterdam	2000-2001
Growing & Blooming	Geest en Grond	Bollenvelden, Noordwijk	Iac. Hittenbogaard & Zin bv	2004
Co-Housing Hoogvliet	Woningcoöperatie vestia	Hoogvliet, Rotterdam	CAE Nederland LBP Ingenieurs Schadenberg Groenadvies	2005-2009
Flow Food	Nederlands Architectuur Instituut	Culinaire toekomst van Nederlands landschap	Alterra Wageningen UR Z&M delicatessen Chez Moi	2005-2013
Flow Food City	Galerie op de Rotte	Binnenrotte, Rotterdam		2005

Collaborations

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Commisioners

Advisors

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